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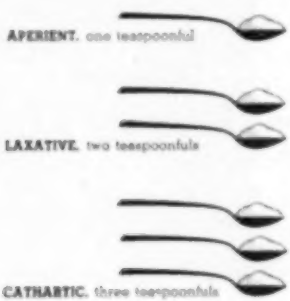
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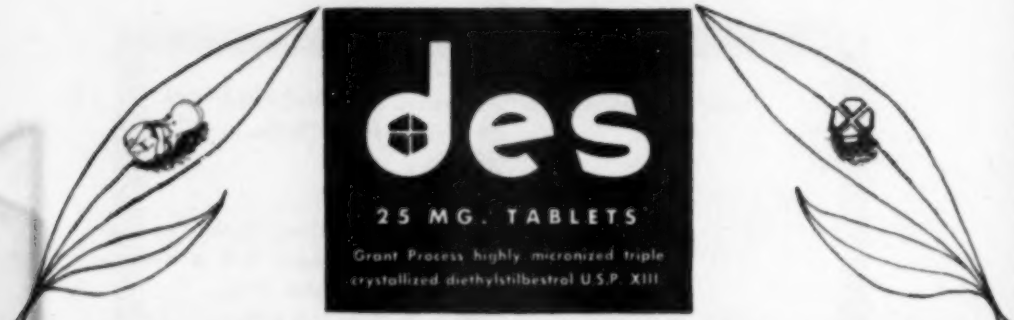
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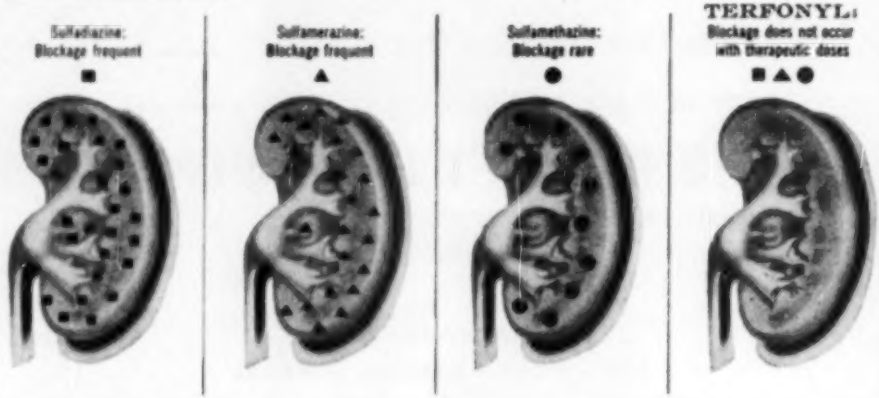
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(1) Henderson, E., and Seneca, H.: Am. J. Digest. Dis. *16*:372, 1949.
(2) Heinecken, T. S., and Seneca, H.: Rev. Gastroenterol. *15*:611, 1948.

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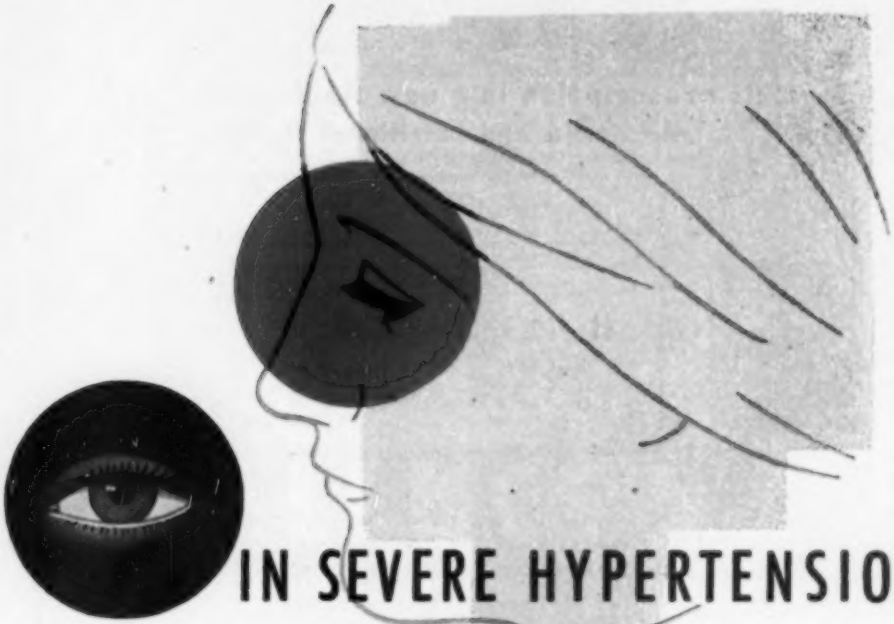
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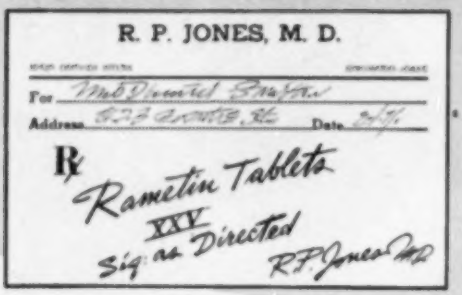
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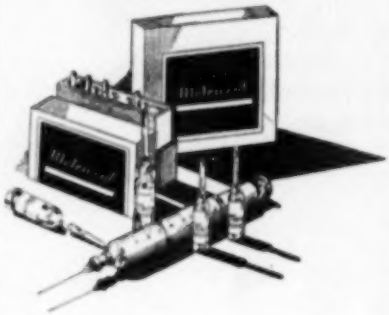
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LETTERS

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This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers, who are invited to comment on controversial subjects, names will be omitted when requested.

CANCER THEORY

"After reading the article 'Landmarks in Cancer Research' in the November issue of MEDICAL TIMES, certain novel ideas came to my mind. I am putting these ideas in writing and sending them to you for whatever interest they may be to your readers.

"These are the ideas that were stimulated by this article:

"(1) The probable cause of cancer is a Virus (precellular living protoplasm) which is introduced or produced in cells causing them to multiply. Tar, x-rays, and other substances probably change proteins in cells into this Virus.

"(2) This Virus is very stable and a very great stimulus to cell multiplication.

"(3) This Virus is probably produced 'in nature' by radioactivity on organic matter, changing it to this precellular living protoplasm. If this could be proven, the secret of the origin of life would be discovered.

"(4) The idea that this Virus (precellular living protoplasm) is the origin of life and also of cancer will not seem far-fetched if it is realized that the morula stage of the developing embryo is just a mass of cells with mitotic nuclei which closely resembles cancer."

Jacob DeVita, M.D.
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1. Barishaw, S. B.: Exper. Med. & Surg. 3:358, 1949.
2. Loughlin, W. C.: N. Y. State M. J. 49:1823, 1949.
3. Selsman, G. J. V.: To be published.

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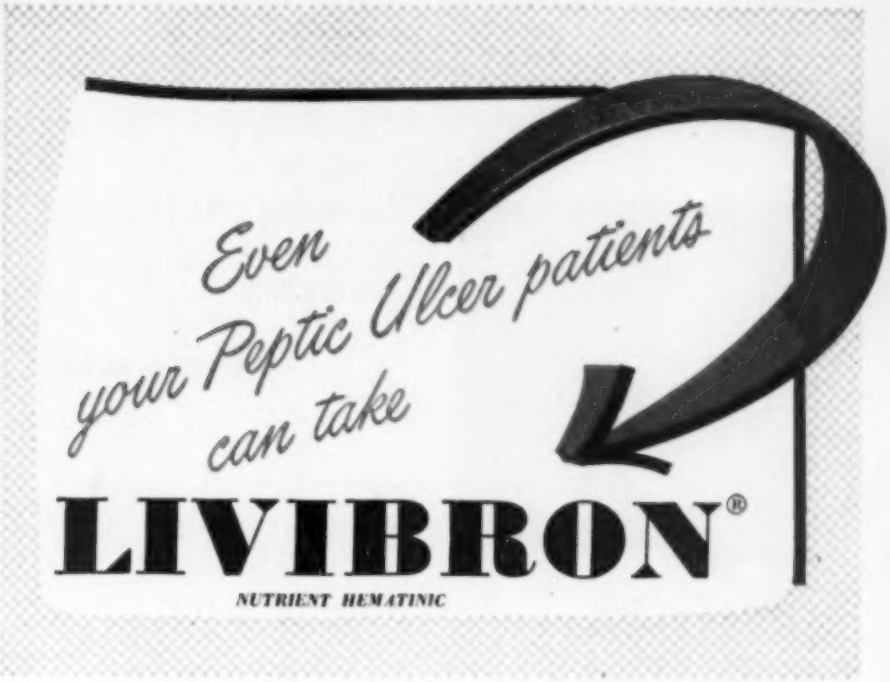
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[1]Terry, L. L. and Friedman, M. The Military Surgeon, Vol. 103, No. 5, November, 1948.
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[4]Reid, R. D., Felton, L. C. and Pitroff, M. A. Pro. Soc. for Exp. Biol. and Med., Vol. 63, 1946, p. 438.

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Erythrol Tetranitrate Merck, taken orally shortly before unusual exertion, emotional upset, exposure to cold, or a heavy meal, may often prevent precordial pain and discomfort. Because of the mild, gradual vasodilatation of several hours' duration produced by this drug, administration at bedtime may be of value in preventing nocturnal attacks of angina.

Literature will be mailed upon request.

MERCK & CO., Inc.
Manufacturing Chemists
RAHWAY, N. J.

MERCK

Erythrol Tetranitrate Merck

(Erythrityl Tetranitrate U.S.P.)

COUNCIL ACCEPTED

immediate relief

within hours itching, burning halted; within 3 to 4 days discharge ceases.

speedy recovery 2 to 7 WEEKS average in vaginitis; within 5 weeks in cervicitis (postoperative)

westhiazole vaginal embodies every proven modern requirement for rapid control of infective vaginitis and cervicitis ...great buffering capacity • rapid restoration of normal vaginal pH • carbohydrates for growth of friendly Doderlein bacilli • control of secondary as well as primary infections to accelerate healing. There is nothing more ... effective, simple, dainty, convenient in vaginitis and cervicitis





westhiazole vaginal

single dose applicators

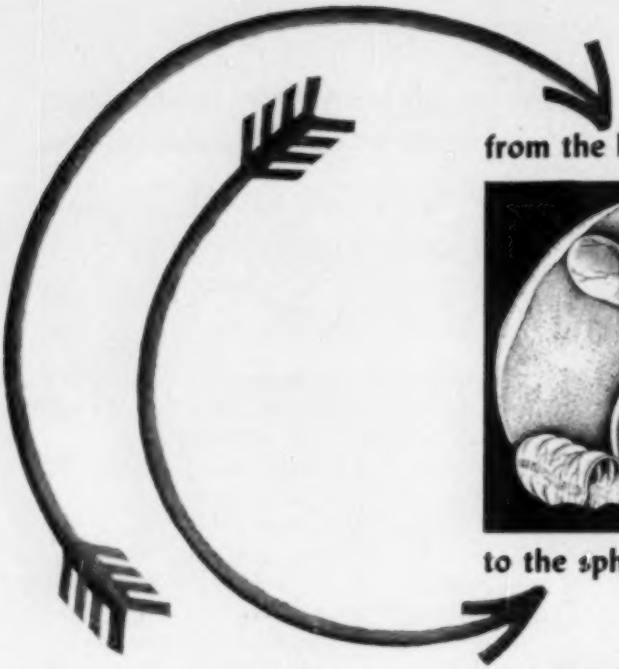


WESTHIAZOLE VAGINAL: a sterile jelly containing 10% SULFATHIAZOLE, 4% UREA, 8% LACTIC ACID, 1% ACETIC ACID in a polyethylene tipped tube. Non-irritating, water-soluble.

Samples and literature on request

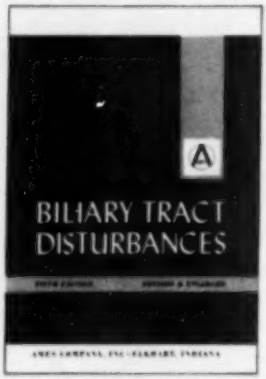
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The area surveyed in the Fifth Edition of "Biliary Tract Disturbances," now available, is the entire, ramified biliary tree—its anatomic and physiologic background and the diagnosis and therapy of its disorders.

Physicians and surgeons acquainted with previous editions of this monograph will find the newly revised, enlarged and illustrated edition even more practical. The brochure concisely presents basic concepts of biliary tract disease, and reviews recent progress in the management of biliary disorders with hydrocholeretics and other measures. You may receive your copy on request from the Medical Department, Ames Company, Inc., Elkhart, Indiana.



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brand of dehydrocholic acid

3¼ gr. tablets in bottles of 25, 100, 500, 1000 and 5000.
Decholin Sodium (brand of sodium dehydrocholate)
3 cc., 5 cc. and 10 cc. ampuls in boxes of 3 and 20.
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Linguets should not be confused with ordinary tablets, which have been "proved relatively ineffective" by sublingual administration. ——

Escamilla, R. F. and Gordan, G. S.: Bull. Univ. California Med. Center, November 1949.



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Androgenic

METANDREN® Linguets

methyltestosterone, 5 mg., white • 10 mg., yellow

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ethinyl estradiol, 0.5 mg., pink

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desoxycorticosterone acetate, 2 mg., green



LINGUETS® are specially shaped to fit comfortably into the buccal pocket; highly compressed to insure slow effective absorption of the hormone directly into the systemic circulation.

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OFFERS THE DOCTOR ALL OF THE ITEMS TO MEET PATIENTS' INDIVIDUAL REQUIREMENTS WHERE CONCEPTION IS CONTRA-INDICATED

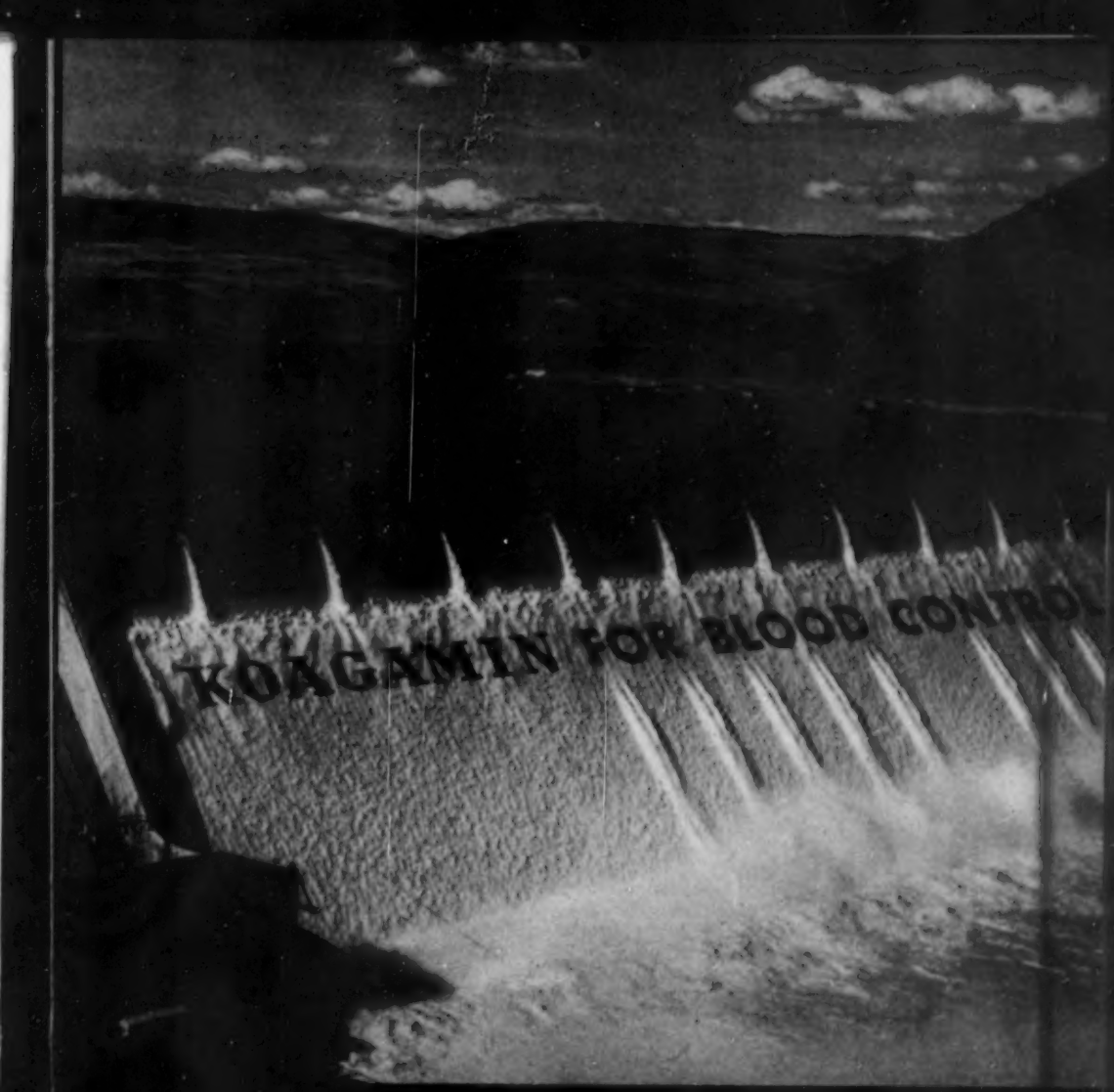
Co-incident with this advertisement, many of the large page advertisements in our March publications will illustrate the entire Holland-Rantos line . . . complete to the physician's exacting needs . . . and available in the drugstore. ➤ ➤ ➤ For a free copy of a fully illustrated reprint of this whole line write to Holland-Rantos.

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PREOPERATIVELY — Provides a clearer, uncluttered field of operation — reduces oozing — minimizes the need for cauterization or local hemostatics without fear of toxic reaction.

POSTOPERATIVELY — For control of secondary bleeding.

THERAPEUTICALLY — Aids in the control of bleeding in gastric ulcers, hematemesis, epistaxis, blood dyscrasias, the purpuras, etc.

Supplied in 10 cc. diaphragm-stoppered vials.

Literature upon request

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Ethical Trade Distributors & Supply House of Pharmacist

Chatham

Modern MEDICINALS



Physicians will find that these brief resumes of essential information relative to the newer products are so prepared that they may be removed and pasted on standard 3x5" file cards, and filed as illustrated in the adjoining picture, for ready reference.

Nucion

3-50

MANUFACTURER: Smith, Kline and French Laboratories, Philadelphia, Pa.
INDICATION: Against the common cold.
ACTIVE CONSTITUENTS: Each capsule contains: Thenylpyramine fumarate, 37.5 mg.; dextroamphetamine sulfate, 1.25 mg.; acetylsalicylic acid, 2.5 gr.
DOSAGE: Adults—2 capsules every 4 hours for 3 or 4 doses daily. Children—Five years of age and over, 1 capsule t.i.d. Adequate dosage is of the utmost importance. When given at the onset of symptoms, will usually abort the cold the very first day. In delayed cases, should produce decided improvement within 3 or 4 days.
HOW SUPPLIED: In bottles of 50 capsules.

Robitussin

3-50

MANUFACTURER: A. H. Robins Company, Inc., Richmond, Va.
INDICATIONS: Cough syrup.
ACTIVE CONSTITUENTS: 1 teaspoonful contains: Glyceryl guaiacolate, 100 mg.; Desoxy ephedrine hydrochloride, 1 mg. in a palatable aromatic syrup.
DOSAGE:
HOW SUPPLIED:

Penicillin Confets

3-50

MANUFACTURER: Schenley Laboratories, Inc., 350 Fifth Avenue, New York 1, N. Y.
INDICATIONS: Designed primarily for use in children and indicated for the oral treatment of infections caused by penicillin-sensitive organisms. Also of value for prophylaxis in rheumatic fever, tonsillectomies, tooth infection, pre- and postoperative conditions.
ACTIVE CONSTITUENTS: Containing 50,000 units of buffered crystalline penicillin G potassium per tablet, in a delightfully flavored sugar base, Confets are taken like candy wafers and are readily accepted by children and adults alike.
DOSAGE: Must be taken on a fasting stomach, not less than one hour before meals; nor less than two or three hours after meals. Dosage same as for oral penicillin.
HOW SUPPLIED: In glass tubes of twelve, three each of four colors—white, pink, green and yellow.

Nisentil Hydrochloride

3-50

MANUFACTURER: Hoffmann-La Roche, Inc., Roche Park, Nutley 10, N. J.
INDICATIONS: Recommended for obtetrical analgesia.
ACTIVE CONSTITUENTS: An analgesic compound similar in altion to morphine. Chemically, 1, 3-dimethyl-4-phenyl-4-propionoxy-piperidine hydrochloride (dl-alpha form). It is a narcotic with a potent pain-relieving action, and is a potent analgesic agent.
DOSAGE: Given by subcutaneous injection in doses of 40 mg. (1 cc.) at least two hours apart. The last dose should be given two hours or more prior to delivery. No more than four consecutive 40-mg. doses should be administered. In this way, there is no likelihood of depression of the fetus.
HOW SUPPLIED: In 1-cc. ampuls, 40 mg. per cc., packages of 6 and 50.

—Continued on page 36a

TITRALAC

(GLYCINE AND CALCIUM CARBONATE)

ANTACID TABLETS

give
quick
long- lasting relief
because
...they
titrate
like
MILK



TABLETS: 40's AND 100's

IN CONTINUOUS THERAPY OF GASTRIC HYPERACIDITY, ESPECIALLY IN THE MANAGEMENT OF PEPTIC ULCER: ONE TABLET PROVIDING THE ACID-NEUTRALIZING POWER OF EIGHT OUNCES OF FRESH MILK

LITERATURE AND SAMPLES ON REQUEST

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BURN-OUT-PROOF!

A safety measure protecting both sterilizer and instruments featured exclusively in





AMERICAN SMALL INSTRUMENT STERILIZERS

8 mechanical features of primary importance

1 **SIGNAL LIGHT**—A 6 watt lamp illuminates the red-cross bullseye when switch is on and unit is in operation.

2 **CONTROL SWITCH**—A Bakelite handle actuates hermetically sealed mercury switches. When switch is on, full heat is applied until water simmers, then heat automatically reduces to maintain mild boiling. If water depletes, all heat is cut off permanently.

3 **CONTROL ROD,** mounted in tension on sterilizing chamber, controls mercury switch with positive setting at boiling point or complete cut-off when chamber is dry.

4 **THERMOSTATIC CONTROL** — Instead of bimetal thermostats, the mercury switches are controlled off and on through the control rod by the expansion and contraction of the sterilizer chamber.

5 **STERILIZING CHAMBER**—A one-piece bronze casting. Cover and finishing jacket of polished stainless steel.

6 **HEATERS**—There are two elements, refractory cement embedded, chromium steel clad . . . a more durable construction designed for dry burning such as laundry type flat iron service.

7 **CONDUCTOR CORD** — Six foot length of heater cord with moulded rubber plug attachment for electric outlet. All component units are approved by the National Board of Fire Underwriters.

8 **MERCURY SWITCHES**—There are two hermetically sealed mercury tubes, safe in the presence of explosive gases, and fully reliable when operated on either alternating or direct current.

PORTABLE MODELS
available in three practical sizes

MODEL A-414 — Size 4" x 6" x 14"

MODEL A-416 — Size 4" x 6" x 16"

MODEL A-617 — Size 6" x 8" x 17"

The "American" Small Instrument Sterilizer provides automatic "burn-out-proof" safety. If water becomes exhausted below the critical level, a complete automatic cut-off of current occurs. Functional operation can only be resumed by replenishing water in the chamber and manually switching on the current again.

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Erie, Pennsylvania

DESIGNERS AND MANUFACTURERS OF SURGICAL STERILIZERS, TABLES AND LIGHTS



Effective
Esthetic

the most widely
prescribed
vaginal jelly

Triple Sulfa Cream



for control of bacterial vaginal infections

In bacterial and nonspecific vaginitis Triple Sulfa Cream—because of its multiple sulfonamide content*—provides effective control of a wide variety of vaginal pathogens. Following cervical cautery or conization and vaginal plastic operations Triple Sulfa Cream,

1 Reduces healing time by as much as 50 percent;[1]

2 Eliminates malodorous discharge;

3 Suppresses secondary bacterial invaders.

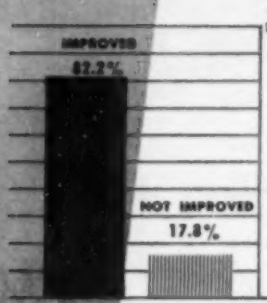
Triple Sulfa Cream is well tolerated. In allergic and sensitization studies "no sensitivity was observed in any instance."[1]

Triple Sulfa Cream is available in 3 oz. tubes with or without the Ortho vaginal applicator. On original prescriptions specify "Triple Sulfa Cream with applicator" for new patients.

1. Marbach, A.H.: Am. J. Obst. & Gynec. 55:511 (March) 1948.
*Sulfathiazole, N'acetylsulfanilamide, N'benzoylsulfanilamide.

ortho pharmaceutical corporation, raritan, n. j.

What do you look for in an antiarthritic ?



EFFECTIVENESS?

With Ertron,® local and systemic improvement has been reported in 701 out of 852 arthritic patients. Thus beneficial results were obtained in 82%; and no improvement was noted in only 17.8%. In a disease as resistant as rheumatoid arthritis, this is truly effective therapy.[1]

"No specificity is claimed for Ertron therapy. However, any substance which is non-toxic and which by its general systemic action does produce improved sense of well-being, diminution of soft tissue swelling, relief of pain, and improved muscle strength and which does make possible a return to gainful occupation, should be used in the treatment of arthritic patients."[2]

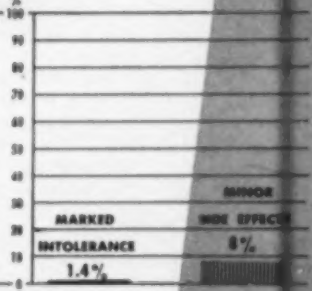
ERTRON

STEROID COMPLEX, WHITTIER

TOLERABILITY?

Tolerance to Ertron is high in patients under periodic observation. Untoward side reactions are rare.[3] In 1,020 arthritic patients, marked intolerance requiring cessation of therapy occurred in only 1.4%, while minor side effects, such as nausea, gastrointestinal upset, headache, etc., were encountered in about 8%.

"These mild digestive disturbances disappear almost immediately after the cessation of Ertron administration and usually do not recur when this therapy is again instituted."[4]



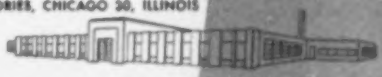
Ertron is supplied in bottles of 50, 100 and 500 capsules, and Ertron Parenteral in packages of six 1 cc. ampuls. Each capsule contains 5 milligrams of activation-products having antirachitic activity of fifty thousand U.S.P. units. Each ampul contains activation-products having antirachitic activity of five hundred thousand U.S.P. units, in sesame oil. Biologically standardized.

BIBLIOGRAPHY

(1) Magnusson, P. B.; McElvenney, R. T., and Logan, E. E.: J. Michigan M. Soc. 46:71, 1947
(2) Levinthal, D. H.; Logan, C. E.; Kahn, K. H., and Fishbein, W. I.: Indust. Med. 13:337, 1944
(3) Cohen, A., and Reinhold, J. G.: Indust. Med. 17:442, 1948
(4) Farley, R. T.; Spierling, H. P., and Krainos, S. H.: Indust. Med. 10:341, 1941

Whittier

LABORATORIES • DIVISION NUTRITION RESEARCH LABORATORIES, CHICAGO 30, ILLINOIS



 —Continued from page 32a

Prostigmin Bromide Syrup 3-50

MANUFACTURER: Hoffman-La Roche, Inc., Roche Park, Nutley 10, New Jersey.
INDICATIONS: For the treatment of myasthenia gravis.
ACTIVE CONSTITUENTS: Each teaspoonful of syrup, equivalent to one tablet, contains 15 mg. of neostigmine bromide U.S.P.; each cc. therefore provides 3.75 mg. of neostigmine bromide.
DOSAGE: The dosage depends on the severity of the disease and the patient's response. The average daily dose is 10 teaspoonfuls, spaced over 24 hours. In some instances, smaller doses may be adequate to produce improvement and in others considerably larger doses —up to 25 teaspoonfuls—may have to be used.
HOW SUPPLIED: In 6-oz. bottles.

Histadyl and A.S.A. Compound 3-50

MANUFACTURER: Eli Lilly and Company, Indianapolis 6, Ind.
INDICATIONS: In aborting the early symptoms of the common cold.
ACTIVE CONSTITUENTS: Phenylpyramine hydrochloride 25 mg., acetophenetidin 2½ grs., acetylsalicylic acid, 3½ grs., and caffeine ½ gr.
DOSAGE: Orally.
HOW SUPPLIED: In packages of 100, 1000, and 5000.

Acon 3-50

MANUFACTURER: Endo Products, Inc., 84-40 101st St., Richmond Hill 18, N. Y.
INDICATIONS: Because of greater absorption of vitamin A from an aqueous medium than from an oily medium, Acon provides a practical means for improved utilization in the prophylaxis and treatment of vitamin A deficiency, particularly when associated with faulty fat absorption. In acne, the water-soluble form of vitamin A in Acon provided definite improvement more rapidly and with smaller doses than in oil solution of vitamin A. In cases with faulty utilization of vitamin A, such as liver disease, celiac syndrome, atresia of the bile duct, cystic fibrosis of the pancreas, biliary deficiency, and diarrhea, defective absorption can be overcome by the administration of Acon.
ACTIVE CONSTITUENTS: Each cc. of Acon contains 25,000 units of vitamin A.
DOSAGE: 25,000 units daily may be given. Doses of 50,000 to 100,000 units can be used depending on individual requirements.
HOW SUPPLIED: 30 cc. dropper bottle.

Histacin 3-50

MANUFACTURER: Walker Vitamin Products, Inc., Mount Vernon, N. Y.
INDICATIONS: For the common cold.
ACTIVE CONSTITUENTS: Per capsule: Pyranisamine maleate, 20 mg.; acetylsalicylic acid, 180 mg.; acetophenetidin, 120 mg.; caffeine, 60 mg.; ascorbic acid, 30 mg.
DOSAGE: 2 capsules every 4 hours, or as directed.
HOW SUPPLIED: In bottles of 25 capsules.

Anesthetic Lubricating Jelly 3-50

MANUFACTURER: Johnson and Johnson, New Brunswick, N. J.
INDICATIONS: Intended principally for use as a lubricating agent to facilitate the passage of instruments into body cavities, as in cystoscopy and proctoscopy. Its prompt local anesthetic action aids greatly in minimizing the discomfort usually attendant upon such examinations, and frequently obviates the necessity of using any other local anesthetic agents.
ACTIVE CONSTITUENTS: A specially prepared formulation of chondrus, tragacanth, glycerine, boric acid and water, containing Metycaine—[gamma (12-methyl-piperidino)] propyl benzoate hydrochloride, Lilly, in a concentration of 1 per cent.
HOW SUPPLIED: In two-ounce tubes with anal applicator.

COUNCIL ACCEPTED

Cellothyl

THE CONSTIPATION CORRECTIVE WHICH

Bargen found relieved "obstinate constipation of long duration" —often in one to two weeks.[1]

Schweig reported achieved "excellent" or "good" results in 92% of acute and chronic cases of 1 week to 15 years' duration.[2]

A NEW HYDROPHILIC COLLOID

declared by the J. A. M. A. to have "obvious advantages." It is "nontoxic... not absorbed by the intestinal mucosa... not degraded by intestinal enzymes... nonantigenic."[3]

shown by Talstar to increase "the bulk of the stools about 10 g." for each gram ingested.[4]

ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY

IN A MATTER OF DAYS
CORRECT YEARS OF CONSTIPATION due to bulk deficiency

Cellothyl TABLETS

- in a physiologic manner
- liquid in the stomach—gel in the colon—where bulk is needed

especially prepared

CHILCOTT *Laboratories*
DIVISION OF The Maltine Company
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Now...

YOUR ARTHRITIC PATIENTS

can tolerate adequate salicylate dosage



Here is the answer!

1. ***Maximum Gastric Tolerance.*** Buffers protect gastric mucosa against the acid breakdown products of sodium salicylate.

2. ***Maximum Salicylate Dosage.*** Gastric tolerance permits ***adequate*** dosage.

3. ***Maximum Blood Levels.*** Adequate dosage means high blood levels, the key to therapeutic effectiveness.

4. ***Maximum Systemic Tolerance.*** Calcium minimizes systemic toxicity and calcium ascorbate overcomes the vitamin C deficiency, frequently present in arthritic conditions.

Salcedrox is indicated in arthritis and allied rheumatic states. Available on prescription through all pharmacies. Write for sample and literature.

Each Salcedrox Tablet supplies:	
Sodium salicylate	5 gr.
Aluminum hydroxide gel, dried	2 gr.
Calcium ascorbate (equivalent to 50 mg. ascorbic acid)	1 gr.
Calcium carbonate	1 gr.

SEMCO

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THE S. E. MASSENGILL COMPANY
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NEW YORK • SAN FRANCISCO • KANSAS CITY

THE SIMPLE, EFFECTIVE FORM OF CONTRACEPTION WHICH MANY PATIENTS PREFER



Clinical investigations[1] reveal that an increasing number of patients prefer the vaginal suppository method of contraception because it allows normal relations without anxiety, fear and the use of mechanical devices.

LYGENES Vaginal Suppositories assure complete confidence—better patient-cooperation, because they are effective, non-irritating and non-toxic—free from any mercury. They are economical, esthetically acceptable, easy to use.



Box of 12, foil wrapped

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ACTIVE INGREDIENTS

Hydroxyquinoline Benzoate 0.30%
p-Chloro-symm.-m-dimethylhydroxybenzene 0.05%
p-tert. Amylhydroxybenzene 0.05%
Zinc Sulfocarbolate 0.50%
pH 4 (when dispersed in 4 parts normal saline)

If your patient prefers jelly, recommend LYGEL VAGINAL JELLY. High spermicidal efficacy with freedom from irritation and ready patient-acceptance. Maintains viscosity at body temperature. 3-oz. tubes.

1. Eastman, N. J., Dept. of Obstetrics, Johns Hopkins University and Hospital, Baltimore, & Seibels, R.E., Memorial Laboratory, Columbia, S. C., J.A.M.A., 139:16-19 (Jan. 1) 1949.

Literature and clinical trial packages on request.

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You may send me

1 Package LYGENES Suppositories

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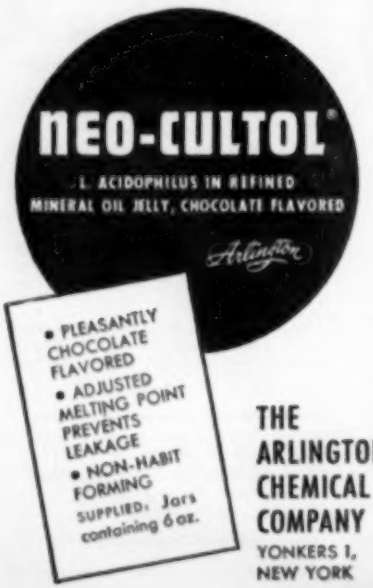
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NEO-CULTOL encourages the restoration of normal colonic function *without harsh cathartic action* . . . establishes a more favorable intestinal flora . . . counteracts inimical putrefactive bacteria.

Administration of NEO-CULTOL implants a potent culture of viable *L. acidophilus* in refined mineral oil jelly, achieving the desired results without griping, flatulence, or diarrheic movements.



THE ARLINGTON CHEMICAL COMPANY
YONKERS 1, NEW YORK

LETTERS

continued from page 22a

Telegram, dramatically confronts the nation with a priceless asset that unfortunately has been tragically ignored.

"During the last half century medicine has received from the basic sciences greater contributions than has ever been recorded in all medical history for a comparable period, but the lamentable time lag to get these data to the patient is a very urgent medical problem not yet solved.

"The integrating of scientific benefits that are now available but inadequately used in clinical medicine has been brought to our attention by another venerable statesman, Herbert Hoover, in the Medical Section of the Hoover report. With great clarity and simplicity he has shown the way to accomplish this and use the countless medical assets now available.

"World unrest will disappear in direct proportion to the ability we demonstrate in using all our assets, both intellectually and materialistically, for the welfare of humanity. This can be done without the welfare state and the socialization of medicine."

Edwin J. Grace, M.D.
Brooklyn, N. Y.

LIKE MT

"I wish to commend you for your January issue. I liked especially Dr. Cheney's article on colds among students. It appears to me as a very sane analysis of the situation and one that I can agree to. I was for 18 years in charge of student health at California Institute of Technology.

"I also liked your summary of 'New Developments.'

"You might like to have at least this one expression of appreciation."

Edward D. Kremers, M.D.
Altadena, Calif.

mm/Hg

HOW DO YOU MEASURE BLOODPRESSURE, DOCTOR?

DO YOU USE ACTUAL MILLIMETERS OF MERCURY?

—— OR A SUBSTITUTE?



Michael Servetus (1511-53) who first stated the hypothesis of the pulmonary circulation.

MEDICAL PRACTICE has undergone many changes since the time of Michael Servetus. Yet certain fundamental discoveries, like the law of gravity, are no different today. The actual mercury column remains the standard* measure of bloodpressure. The BAUMANOMETER is built on the principle by which all other types of bloodpressure apparatus are regularly checked for accuracy.*

Yes, the BAUMANOMETER can be depended upon to give you the accurate readings you need for correct diagnosis and treatment. This instrument has been designed to meet *your* requirements, as you have expressed them through the past decades.

There is a BAUMANOMETER to meet your every need. The handy, portable **STANDBY** model, calibrated to 300 mm/Hg is easily moved from place to place in office or hospital. The **WALL** model, for examining rooms and the **300** model, for desk use, are also calibrated to 300 mm/Hg. Finally, there is the **KOMPAK** model, that registers to 260 mm/Hg and weighs only 30 ounces. It will carry handily in your bag.

All are scientifically accurate, all are sturdy, and simple to use. All are equipped with the new accurate **AIR-LOK CUFF**, so simple to use it can be applied in a matter of seconds.

**May we send you a copy of U.S. Bureau of Standards Technologic Paper No. 352 "Use and Testing of Sphygmomanometers."*



Your surgical instrument dealer can supply

Lifetime Baumanometer

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Announcing...

'PERAZIL' BRAND

CHLORCYCLIZINE HYDROCHLORIDE

a new type antihistaminic

Relief from allergic symptoms for 12 to 24 hours with a single dose



'Perazil' brand Chlorcyclizine Hydrochloride is a completely new type of antihistaminic, its distinctive component being a piperazine ring instead of the usual ethylenediamine grouping. This uniquely different chemical structure results in a prolongation of action—up to 24 hours following a single 50 mg. dose.[1] In contrast to many other antihistaminic compounds, 'Perazil' exhibits a low incidence of side-effects despite its high potency and prolonged effectiveness.

INDICATIONS: Hay fever, vasomotor rhinitis, urticaria, allergic dermatitis and pollen asthma.

DOSAGE: 50 mg. (one product) once daily with water; may be increased to two or three times daily if required in very severe cases.

PREPARATION: 'Perazil' brand Chlorcyclizine Hydrochloride 50 mg. Compressed (scored). Bottles of 100.

1. Jarca, S. H., Annals of Allergy, Vol. 7, No. 4 (July-Aug.) 1949

BURROUGHS WELLCOME & CO. (U.S.A.) INC., TUCKAHOE 7, N. Y.

"Premarin" VAGINAL CREAM

...contains conjugated estrogens (equine) which have long been the choice of physicians treating the climacteric. The estrogen content is incorporated in a non-liquefying base which ensures maintenance of consistency at normal body temperature.

"Premarin" Vaginal Cream is standardized in terms of the weight of active water-soluble estrogen content. The potency is declared in milligrams of conjugated estrogens (equine) expressed as sodium estrone sulfate.





"Premarin" Vaginal Cream is valuable alone or as an adjunct to estrogenic therapy by other routes in the treatment of senile vulvovaginitis, pruritus vulvae, and kraurosis vulvae.

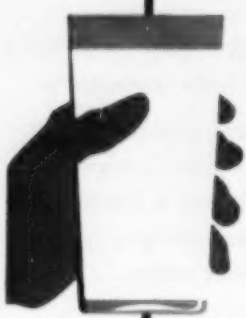
For convenience, the combination package is recommended. This package contains a 1 1/2 ounce tube of "Premarin" Vaginal Cream, No. 874 (0.625 mg. per Gm.) together with a specially designed dosage applicator which is calibrated to indicate the quantity of cream administered. The 1 1/2 ounce tube of "Premarin" Vaginal Cream is also supplied without applicator, as a refill.

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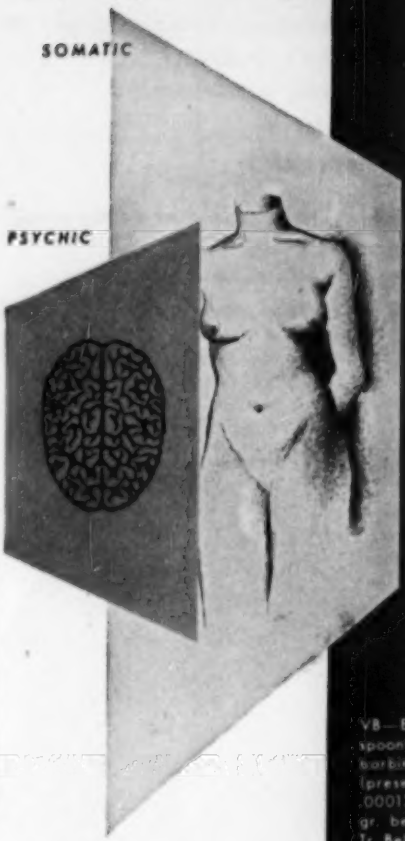
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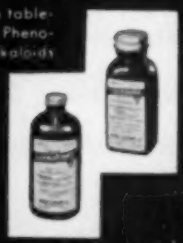
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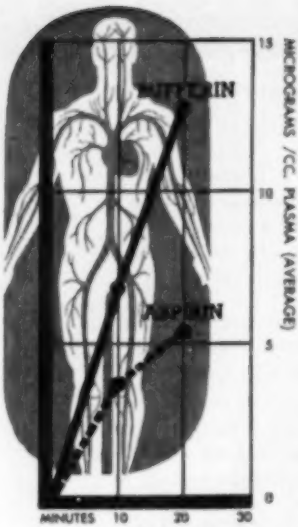
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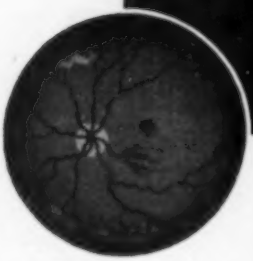
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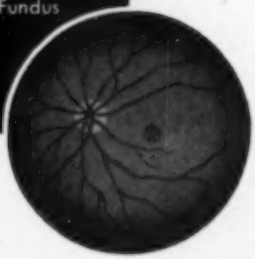
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AVAILABLE: Bottles of 25 and 100.

REFERENCES:

1. Kammandel, N. et al.: Awaiting publication.
2. McGavack, T. H. and Klotz, S. D.: Bull. Flower Fifth Ave. Hosp., 9:61, 1946.
3. Weinberg, J., McGavack, T. H. and Boyd, Linn J.: Am. J. Digest. Dis., 15:332, 1948.

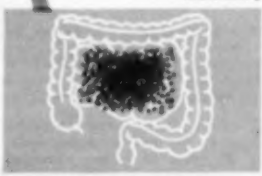
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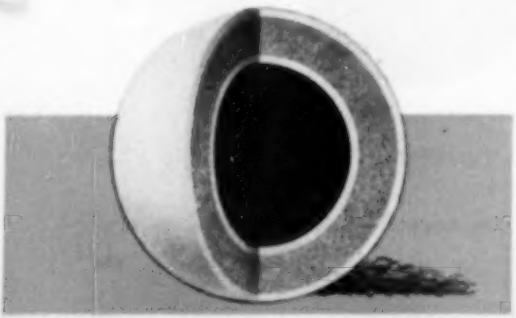
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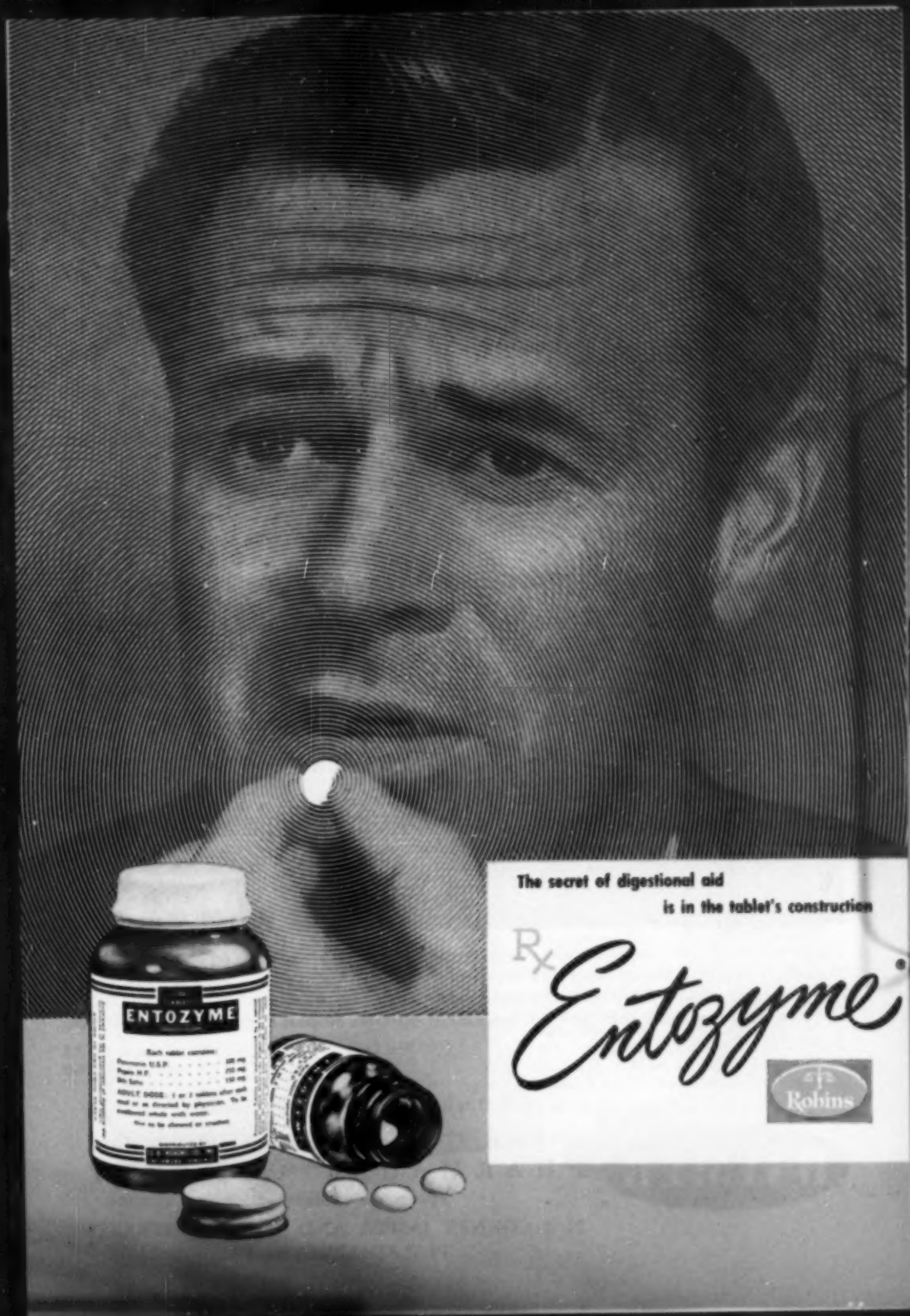
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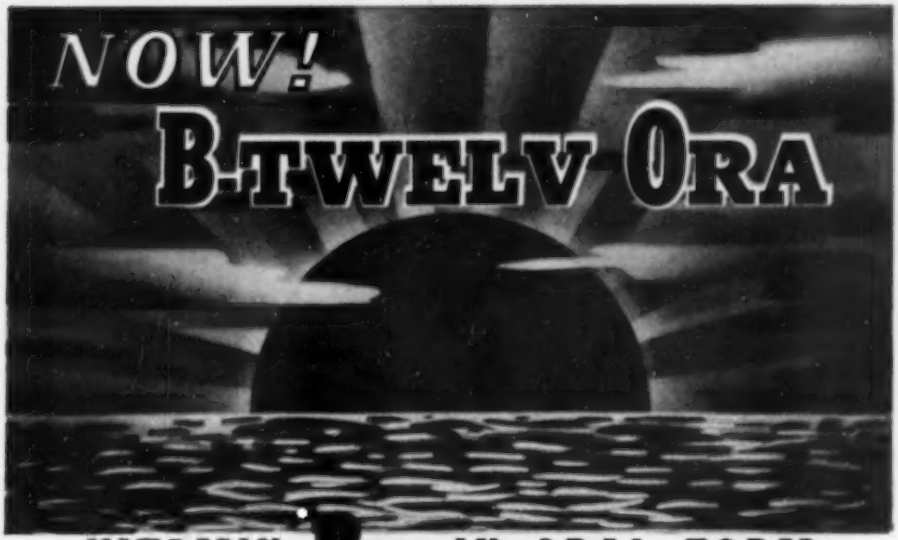
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Endocrinological Management of the Female, in General Practice

Cyril W. Schumacher, M.D.
St. Louis, Missouri

The title of this paper will perhaps provoke in the minds of many general practitioners the thought that endocrinological management of the female cannot be covered in a short treatise. It may also be concluded that it is impossible for the general practitioner to make use of the diagnostic criteria and objective tests that are necessary for relatively accurate diagnosis and effective treatment of endocrine disturbances in the female. For this deduction they cannot be blamed, after reading about the many hormonal assay techniques that are used by the biological chemist and the complicated methods of procedure that are carried out by the research endocrinologist. Most physicians have only a hazy conception of the present status of the therapeutic value as well as the limitations of the hormones and their synthetic substitutes. This is an unfortunate fact which has delayed the development of a new and engrossing field.

Another reason for the doubt existing in the general practitioner's mind is the memory of hormones being advocated as a panacea for all sorts of ills some twenty years ago when the science of endocrinology was in its infancy. In addition to this is the remembrance of all of the dismal failures encountered in everyday practice when he first began using these products. When we attempt to analyze the possibilities of endocrine treatment today, we must realize that in the early days of hormone therapy the doctor was forced to rely solely on symptomatology and a superficial examination.

The story of sex hormones can be told better now, because we can today obtain these secretions in pure form, exactly as they are produced in the body, and diagnostic methods have been so simplified that any general practitioner can establish them in his office with a minimum expenditure of time and money.

The necessity of establishing a diagnostic standard by which correct conclusions can be made in the office of the general practitioner is obvious. No woman can be treated on the basis of symptomatology, because whatever her age, her most common complaints are related to her vasomotor system. As we all know, these symptoms can be either physical or mental with no dividing line. How then are we to differentiate between the symptom that is due to emotional or personality disturbance and the one that is due to endocrine imbalance? The answer to this question lies in the complete evaluation of all findings aided by laboratory methods whenever possible. All patients cannot be so didactically studied that the treatment can be outlined from laboratory findings alone, neither can the victim of cardiac, diabetic, nephritic or any other systemic malfunction be so studied. Laboratory tests are made in all of these disease conditions and we would feel wantonly neglectful if we did not make use of them. Why then do we find so many doctors who are reluctant to do so in the field of endocrinology?

While still concerned with our introductory statement, it is necessary to bring out another factor which has been instrumental in discouraging the general practitioner from adequately studying his patient if she has a suggested endocrinopathy. All too often the doctor is told that relatively few conditions can be satisfactorily

controlled by endocrine therapy. He hears more lectures on the misuse of the hormones than on their proper use. He is told more about contraindications than indications and is always reminded that the cancer-prone individual should not be given estrogenic substances or any other medication which may be in the slightest degree stimulating. Examples are cited where patients had been given hormone therapy whereas the symptoms were all due to domestic or economic difficulties. He is told about the constitutionally inadequate patient who had been given endocrine "shots" and was thereby thrown out of proper balance. All of these statements may be made about any other form or method of improper treatment. I feel we can rightfully conclude that all of the criticisms of endocrinology can be explained by admitting that endocrinology is still a new science and hence is not completely understood.

Granting then that many of the causes and effects in the science of medicine are still left unexplained and that endocrinopathy in the female differs little from any of the other dyscrasias that may befall her biological make-up, let us consider three important questions which are often asked:

(1) What are the uses of sex hormones?

(2) How can we be certain that we are not misusing these therapeutic agents?

(3) What results can we expect from the administration of the many products that now flood the market?

In our consideration of the first question we should be fully cognizant of the fact that the only conditions amenable to treatment by use of the hormones are those which respond to substitution therapy. These are hypothyroidism, menopausal syndrome, amenorrhea (primary, secondary, and functional), functional uterine bleeding, threatened and habitual abortion, menometrorrhagia, and certain other disorders due to ovarian imbalance. Other sex endocrine insufficiencies are quite rare and, at best, extremely difficult to diagnose and are outside the realm of most hospital laboratories, much less the doctor's office. These would include hypoadrenalism, hypoparathyroidism and hypopituitarism. The hyperfunction of sex glands is more difficult to determine because in this field one meets a more bizarre clinical syndrome than one does in the hypofunctions; however, the general practitioner must always be on the lookout for these conditions for if they are to be diagnosed early, the family doctor, in most instances, must make the diagnosis. Because most of the hyperfunctions cannot be handled adequately in the general practitioner's office, no more will be said about them in this paper.

On the subject, "How can we be certain that we are not misusing the therapeutic agents at our disposal?", most observers believe that if the doctor becomes acquainted with the basic facts concerning this type of treatment, if he has at his disposal a few simple diagnostic facilities that will provide at least a partially sound knowledge of the physiological background of the condition he is treating, if he attempts to procure a well-rounded history and gives his patient a sufficient amount of time, and if he prescribes the medication in such doses as are calculated to do as much good as possible without evil side-effects, he need not be alarmed about what might seem to him to be a great lack of knowledge concerning the therapeutic use of sex hormones.

As to the third question regarding the results to be expected, it is hoped that after you read this treatise, you will be better able to evaluate all of the findings and many of the products so that you may establish your own criteria of results.

Diagnosis

So much is said about diagnosis in all medical fields of endeavor with the final answer resolving into the conclusion that a careful history must be taken, I hesitate to mention this phase of management of the female; however, here again there are no short cuts. The physician must employ complete knowledge of psychopathology and tissue pathology as well as human understanding, sensitivity and sympathetic appreciation of human factors and their emotional peculiarities if he hopes to make

a true diagnosis of the condition of his endocrine patient. No matter how wise the physician may be or how long he has practiced, he must give this type of patient much time. He must allow her to relate her full story, and most important of all, sit down with her after the examination and make an effort to explain the inner workings of her complicated system. This is especially important in the after care of the patient because when we attribute all of the vague aches and pains to the same cause too often, the patient becomes dubious about the diagnosis. Then, too, most patients who consult a physician expect him to find some physical cause for their ailment. Frequently in endocrinology, the cause of the difficulty is entirely functional and the patient is not completely satisfied, as a result, with the diagnosis we are forced to give her.

The revered and trusted family doctor is the one individual who is in a position to make most endocrine diagnoses inasmuch as he has the confidence of his patients. He has knowledge of their personal lives over a long period of time, knows their familial background and has a more comprehensive insight when he is called upon to decide whether or not the patient has an emotional illness or an endocrine imbalance. The general practitioner is not forced to go through a sheaf of paper to determine the chronologic development of his patient.

The history must include a detailed story of the manner in which the symptoms developed. Perhaps in no other diagnostic field is the family history so important. I have found that an important aid in history taking is to make use of case illustrations. The examiner should try to think of a like case and describe this experience. The patient can then readily identify herself and throw out of her mind the thought that she is the only one who has suffered from such a vast number of peculiar sysptoms. A more complete history is the usual result.

Physical Examination

The physical examination in endocrine conditions, as in other medical problems, should aim not only to evaluate the observations of the presenting syndrome but to determine the presence or absence of disease due to other causes.

The examination need not take too much of the general practitioner's time if the proper routine is established in his office. Most patients will come to the office for a basal metabolism test before the doctor has finished his hospital rounds. A blood count and a urinalysis can be done if a little effort is made to train the office help or to procure the services of a technician. While the patient is being examined, vaginal smears can be obtained and properly stained by the assistant during the time the doctor is completing his examination.

With the examination completed one can weigh all of the findings. He can base his diagnosis on the type of symptoms and their occurrence; from a neuropsychiatric and gynecological examination he can discover or rule out organic disease. The thoroughness of this type of examination reassures the patient and gives her much needed confidence.

The following diagnostic features are most pertinent in the endocrinological examination of the female.

(1) Considerable information can be gathered from manual examination alone by evaluating the architecture and development of the uterus, vagina and cervix as well as measuring the thickness of the adnexa. The so-called thickening or spongy feeling in the adnexa can be indicative of ovulation or of disease. The blood vessels in this area are dependent upon the ovarian hormones for their maintenance and growth; consequently there will be no coiling or sponginess in these structures if the hormones are not present.

(2) Application of the method of evaluating vaginal smears is not difficult if one follows a few simplified rules of procedure and observation.

(3) Ovulation or its absence may be detected by means of a daily record of the basal body temperature. The elevation of the temperature during the cycle can as a general rule be interpreted as an indication that the patient is ovulating, since

there will be a rise at the time the ovarian follicle ruptures.

(4) The basal metabolic rate is important and should be properly evaluated. One cannot be certain that an individual's basal test on a particular day gives a true estimate of the metabolic rate. It may so happen that the basal test is made on a day when the patient is at her highest or her lowest ebb. A repeat basal should always be done if there is doubt about the accuracy of the reading. I have always thought that a true basal could not be obtained by taking only a fasting test and that a "surprise" basal should be done when the patient has been in regular routine on her normal diet and when she does not have an anticipatory excitement about the procedure that is to take place or any other complicating nervous factor that might interfere with the reading.

(5) Cholesterol Determination. Reams of material have been written regarding the importance of cholesterol determinations and the significance of these readings in endocrine disturbances, in relation to liver function and in degenerative cardiovascular diseases, with the result that most general practitioners and investigators are completely confused relative to the importance of this test as well as the normal readings. In order that a complete evaluation of the importance of cholesterol determinations could be made, your writer ran routine cholesterols on 300 patients on which basal metabolic rates were calculated. These readings were then contrasted against one another in an effort to establish a definite relationship between the two procedures. The age and weight were also considered in the final analysis.

Results of this extensive series can best be demonstrated by the accompanying charts. These graphs serve to illustrate and explain that:

1. There was no appreciable difference in the cholesterol determinations when these readings were compared with the age of the patient.

2. The majority of the cholesterol determinations were in the normal range of 150 mg. per cent to 200 mg. per cent regardless of what the basal metabolic rate was.

3. The basal metabolic rate did not vary in the majority of instances from the normal range of minus 15 to plus 10.

These figures prove that the general practitioner need not be too much concerned about a cholesterol determination on his endocrine patient. True, in rare instances it may be of value, but in the majority it is inconsequential.

The Vaginal Smear

The technique employed in my office in obtaining a vaginal smear conforms with that of most all of the technics that are printed in the textbooks. One should make certain that a relatively clean, moist area of the vagina is chosen. It is far better, therefore, to use a speculum. Whether the cells of the outer layer of the vaginal mucosa are aspirated with a bulb syringe or are obtained on a spatula or cotton applicator does not matter too much. In my opinion it is a somewhat simpler procedure to obtain this material in a long B-D bulb syringe. It is more readily handled and the technician can manage the material with greater facility. The vaginal cells are then placed upon a slide and allowed to dry. After the smear is dried it can be stained with most any stain. Some use only methylene blue, others use fuchsin, carbolfuchsin, gentian violet, Lugol's, hematoxylin-Best carmine stain, the Shorr or Papanicolaou stain. I have for approximately ten years used three stains. The Shorr technic and the Shorr stain are used on all cases. This stain is by far the more enlightening since a differentiation of the staining qualities of the cell can be made. The female who has a high estrogen titer will show a slide with large foamy desquamative cells, red in character, whereas the deficient female will have a green staining, small, irregular basal cell, many immature cells with large deep staining nuclei and a relatively small amount of cytoplasm frequently accompanied by many polymorphonuclear leukocytes. I also use a basic fuchsin stain which simply shows the size of the cell, the nuclei and the leukocytes.

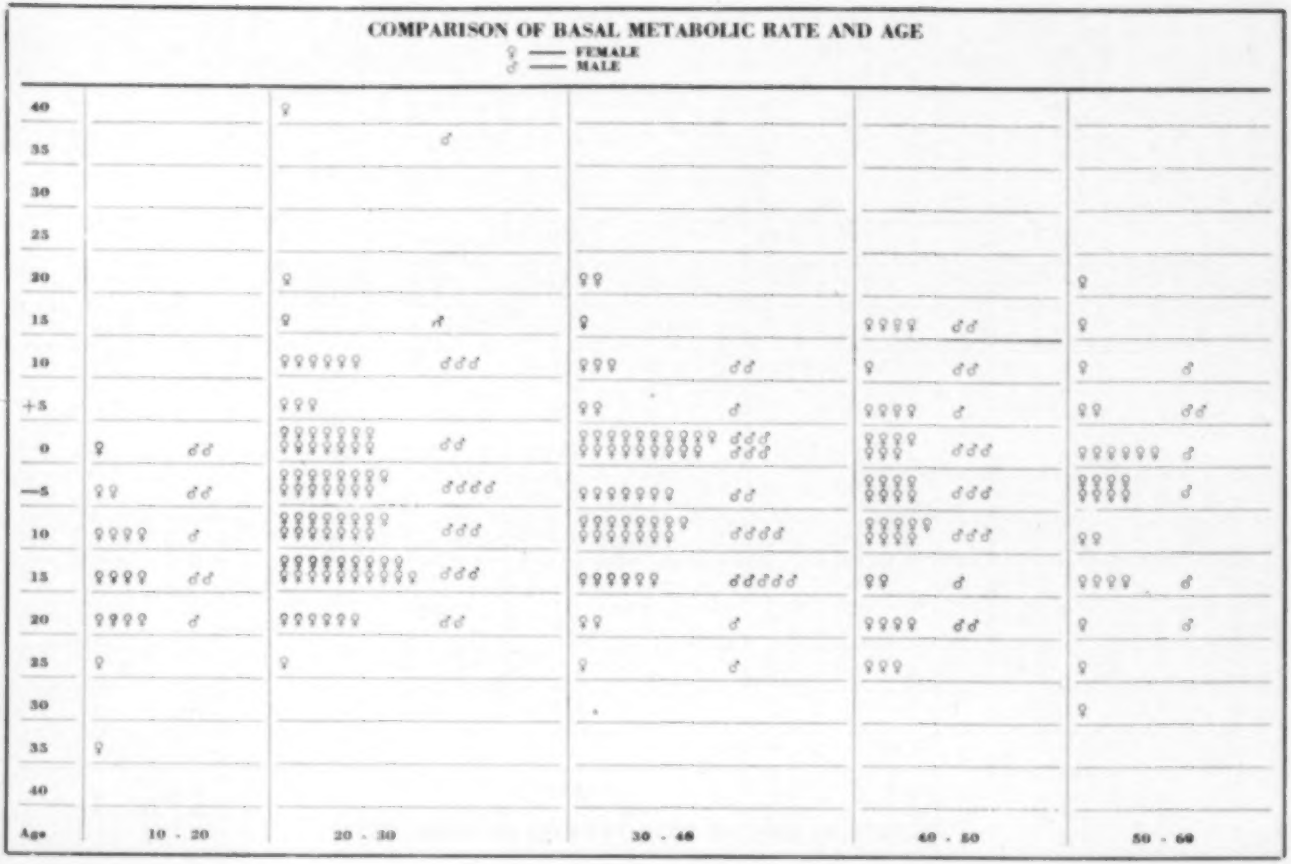
COMPARISON OF CHOLESTEROLS AND AGE OF PATIENT

♀ —— FEMALE
♂ —— MALE

	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
270		♀♀♀	♀	♀	♀
240					
230		♀		♀ ♂	♀♀♀♀
220		♂		♀♀	♀♀
210		♀♀	♀	♀♀♀ ♂♂	♀♀
200	♀	♀♀ ♂	♀	♀♀	♀♀♀
190		♀♀♀♀♀♀	♀♀	♀♀♀♀	♀♀ ♂♂
180	♀	♀♀♀♀♀ ♂♂♂	♀♀♀♀♀ ♂♂♂	♀♀♀ ♂♂	♂♂
170	♀♀♀ ♂	♀♀♀♀♀ ♀♀♀♀♀ ♂	♀♀♀♀♀ ♀♀♀♀ ♂	♀♀♀♀ ♀♀♀ ♂	♀♀♀ ♂
160	♀♀♀ ♂♂♂	♀♀♀♀♀♀♀ ♀♀♀♀♀♀♀ ♂♂♂	♀♀♀♀♀♀ ♀♀♀♀♀ ♂♂♂♂ ♂♂♂	♀♀♀♀♀ ♀♀♀♀ ♂♂♂♂	♀♀ ♂
150	♀♀♀ ♀♀♀ ♂	♀♀♀♀♀♀ ♀♀♀♀♀ ♂♂♂♂	♀♀♀♀ ♀♀♀ ♂♂♂♂	♀♀♀ ♂♂	♀ ♂
140	♀♀ ♂♂	♀♀♀♀♀♀♀ ♀♀♀♀♀♀♀ ♂♂♂	♀♀♀♀ ♀♀♀♀ ♂♂♂♂	♀♀♀ ♂♂	♀♀♀♀
130	♀♀♀♀	♀♀♀♀♀♀♀ ♂♂♂	♀♀♀♀♀♀ ♂	♀♀♀	
120	♀ ♂	♀♀♀ ♂	♀♀♀♀ ♂♂	♀	♀♀
110	♀	♀♀	♀	♀ ♂	
100				♀	
Age					

COMPARISON OF BASAL METABOLIC RATE AND AGE

♀ —— FEMALE
♂ —— MALE



The third method used in my office is the one in which Lugol's solution is employed. The vaginal smear is dried on a slide and placed on the margins of a medicine glass containing Lugol's solution for approximately ten minutes. It is interesting to note the staining qualities of the cell. If the cell is functioning well, the glycogen will take up iodine vapors sufficient to stain a dark brown, whereas if the individual has a low estrogen titer the cell will stain canary yellow. Another interesting feature about this stain is that when the slide is kept for several months, the cells liberate most of the iodine, but when the slide is again placed over Lugol's it will take up approximately the same amount of iodine that it did when it was first stained.

The classification of the cells is entirely optional. Most of the authorities use the Type 1, Type 2, Type 3 and Type 4 classifications, Type 4 indicating that the cells are large, flat, desquamative epithelial cells with minute nuclei; Type 1 presenting a small, round, well-stained basal cell with vasicular nuclei and many polymorphonuclear leukocytes. Type 1 is generally considered negative, estrogen-deficient or the castrate smear.

When one attempts to draw conclusions relative to the diagnosis of an endocrinopathy in the female one comes face to face with problems that are, to say the least, difficult. He must take into consideration the fact that he is dealing in most instances with an individual who is extremely sensitive, one who is prone to be influenced by many variable factors such as: introversion, sex disturbances, emotionalism of all types, egocentricities and many other emotional traumas which her personality must master. The presenting syndrome may be the result of an unbalanced autonomic nervous system caused by anxiety trauma or it may be due to a lack of ovarian function which as a rule is accompanied by an attending hyperfunction of the pituitary gland. The syndrome also may be the result of one or both of the above and may be associated with other diseases.

COMPARISON OF PLUS BASALS AND CHOLESTEROLS

♀ —— FEMALE

♂ —— MALE

Mg. %	Zero—Plus 10	Plus 10—Plus 20	Plus 20—Plus 30
240			
230	♀♀	♀	
220	♂	♀	
210	♀♀	♀	
200	♀	♂	♀
190	♀♀	♀	
180	♀♀ ♂	♀♀	♀
170	♀♀♀♀♀ ♂	♀♀ ♂	
160	♀♀♀♀♀ ♀♀♀♀♀ ♂♂	♀ ♂♂♂♂	
150	♀♀♀♀ ♂♂♂	♀♀♀♀ ♂	♂
140	♀♀ ♂♂♂	♀♀♀ ♂	♀♀
130	♀♀♀♀	♂♂	
120	♀♀	♀♀	♀
110			
100		♀	

A common diagnostic error is made when the doctor works on the assumption that in all cases the symptoms or findings present definite specific diagnostic criteria which are peculiar to an endocrine imbalance. He should maintain a low tenet of conjecture and a high tenet of doubt in making a diagnosis of an endocrine imbalance. He must be fairly certain that his assistant is accurate, the patient is cooperative, the metabolor is not defective and he is not neglectful.

The doctor treating an endocrine condition must remember that if a basal metabolic rate is plus, 2, 4, 6, or 8 he may still

prescribe small doses of thyroid in the majority of cases; therefore, a BMR is not done to determine how much minus or plus a reading may be but to determine whether or not the patient can take thyroid and how much.

Before the treatment of the more important specific endocrinopathies is outlined, it is necessary that we have a full understanding of some of the technical terms that are employed.

The first problematical term is, "What is meant by withdrawal bleeding?" Withdrawal bleeding means that when the estrogenic hormone (the stimulus for the maintenance and growth of the uterine blood vessels) is withdrawn, a degenerative vascular change takes place which causes tissue necrosis, a vascular crisis and uterine bleeding. We often hear that withdrawal bleeding signifies the removal of both the estrogenic and progestinating hormones. This is not true since the withdrawal of the principal stimulus (estrogen) results in bleeding. However, the administration of progesterone with estrogen will cause withdrawal bleeding earlier, after the cessation of treatment, because the presence of progesterone results in a more rapid elimination of estrogen from the body.

The second perplexing problem that confronts many general practitioners is, "How do rat units and international units compare?" The rat unit method of determining a degree of potency was used before the purification of estrogens was possible. Since the estrogens could not be purified, they could not be accurately weighed. The Allen and Doisy rat unit was based on the smallest quantity of estrogenic substance which produced estrus (sexual impulse) in 75 per cent of sensitized, spayed adult rats when administered in three divided doses every four hours.

The International Unit is a measure of biological activity which enables research workers to compare an unknown with a known substance of standard purity. If all of the estrogenic substances on the market were pure, there would be no need for the unit classification, but since many of them are a mixture of several estrogens,

COMPARISON OF MINUS BASALS AND CHOLESTEROLS

♀ —— FEMALE
♂ —— MALE



the potency must be expressed in units. The milligram measurement is used for pure estrone. One milligram of pure estrone has an activity of 10,000 International Units or 1,000 rat units; thus 1 rat unit is equal to 10 International Units.

In the final analysis the true strength of an estrogen lies in the clinical result that is desired. It is therefore necessary for the physician to estimate the optimum for his patient's need. He can do this in several ways. He can measure the degree of response to estrogen therapy by study of the changes in the cells of the vagina by observing the objective and subjective relief of complaints, and by determining the dose necessary to induce withdrawal bleeding.

Still another debatable question often arises when an attempt is made to compare the degree of activity between the oral and the parenteral dose of estrogens. All of the estrogens, natural and synthetic, except the ethinyl group, pass through the liver in the process of digestion where they are partially inactivated and excreted. The ethinyl group is not digested nor inactivated when given orally and consequently is as potent as parenteral estrogen.

Relative potency of the various products on the market is a subject in itself. It is generally agreed that when quick action through rapid absorption is needed that the keto-hydroxy-estrins such as Theelin, etc., are indicated in 2 to 20 thousand I.U. doses. The estradiol esters (benzoate and dipropionate) such as Progynon and Dimenformon are administered when a more prolonged effect is indicated. The potency of the product is too high when side effects of a disagreeable nature are produced. These are easily recognizable and need not be enumerated.

Treatment

The general practitioner is called on to treat many endocrinopathies in the female. The discussion in this thesis will deal chiefly with the amenorrheas, menometrorrhagias and the climacteric. The secondary complaints that are associated with the deficiency state of the patient such as vulvovaginitis, menstrual tension, painful micturition, backaches, sterility, threatened and habitual abortion, nausea and vomiting of endocrine origin, obesity, and certain organic diseases can be treated if the basic rules that are outlined for the primary deficiencies are followed.

The amenorrheas (primary, secondary and functional) very often will respond to thyroid medication alone. It should be remembered, however, that all psychological factors and environmental conditions should be removed along with other deficiencies or excesses such as those that may occur in the diet of the individual.

If the vaginal smears show an ovarian inadequacy it is generally concluded that estrogen-progestin withdrawal bleeding is the better way to prime the uterus for normal function; these two hormones are administered cyclically for a period of four to ten cycles. When the vaginal smears show good development and not much cornification, progesterone should be administered during the latter part of the cycle.

The menometrorrhagias need no longer prove to be the stumbling block to the clinician as they have in the past. Measures to stop this peculiar irregularity can be introduced and the normal cycle re-established in most cases if the proper therapy is employed.

Here again it seems advisable to begin with thyroid medication, if such is indicated. The cyclic use of progesterone or estrogen combined with progestin administered for two or three consecutive days may provide excellent results. The estrogens may be used alone in many cases. The androgens have also been found to be of benefit in the treatment of hypermenorrhea.

The indecision that is indicated in this outline of treatment serves only to emphasize the importance of a complete work-up of the endocrinopathic woman. The amenorrheic and menometrorrhagic female is becoming a much more common problem year by year. The reason for this increase in incidence is not fully known.

It is generally thought that it could be due to a deficiency state which is in many instances created by the strict diet routines that are followed by so many women today.

The story on how to treat the climacteric female could extend into volumes. The physician may be called on to exercise every bit of medical finesse possible in order to manage this individual. In regard to the symptoms of the woman who is in so-called "change of life," everyone is thoroughly acquainted with this myriad of complicated complaints; however, I would like to insert the thought that all too often the myalgias, arthralgias, and various forms of the arthritides are overlooked and that dramatic relief of menopausal arthritis and arthralgia is frequently obtained following even so little as a therapeutic trial of hormonal substance.

The management of the menopausal woman rests on what has been said before relative to diagnostic facilities and criteria before any type of treatment is instituted. We must not hesitate to make a diagnosis of psychoneurosis in the woman who is in her fifth decade of life. It does exist. As said before, women in this age are extremely vulnerable. They are prone to want the same luxuries their next-door neighbor or their across-the-table bridge partner enjoys. Such a woman often hears that a very close friend is receiving "shots" for her many various and vague complaints, with dramatic results. She has a mental fixation that when she reaches this age she too must have symptoms. To make the effort to convince her that she need not have symptoms or does not need "shots" is oftentimes pure folly. This psychoneurotic individual should be told she is suffering from this type of delusion and should be given mild autonomic depressant drugs with a low grade of sedation.

Conclusions

The endocrine patient should be viewed in two separate groups. The first group will respond to therapy instituted as a result of complete evaluation of all findings aided by laboratory methods. By this I mean the clinical syndrome follows a patterned course, the basal metabolic rate is minus, the vaginal smears show evidence of ovarian aplasia and the symptoms correspond to the usual syndrome.

The second group must be treated with more caution, because as a rule no patterned picture is presented. Laboratory findings are confusing and not constant. The history suggests that the patient is emotionally unbalanced as well as irregular in her functional gland system. This woman must be treated on a trial-and-error basis. Low dosage of all material used is important and often maintenance therapy is all that is required. She must be regulated according to her symptomatology.

Comment

The thought I would like to leave with you in the conclusion of this paper is that although caution should be exercised in the administration of all hormones, adequate doses should be given, and that an adequate dose cannot be prescribed without the aid of laboratory findings and a careful history. I want to repeat again that when we treat an endocrinopathy we are dealing with extremely sensitive structures which show regressive changes, sometimes without preliminary symptomatology. The female is at all times prone to be irregular with episodes of deficiencies and exacerbations of profusion because her estrogenic secretions are extremely variable from day to day, which variability results in a concurrent imbalance in the autonomic nervous system.

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SPECIAL ARTICLE

Chronic Primary Glaucoma

This summarization attempts to cover the essential therapeutic information on the subject and is designed as a time-saving refresher for the busy practitioner.

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Chronic primary glaucoma is perhaps the least understood of the various types of glaucoma. Some consider it to be a disease whereas others are convinced that it is not a disease but a congenital defect in the development of the eye which is responsible for its failure to meet the normal functions in producing aqueous and in the exit of aqueous from the eye.[1] This will be considered in detail later.

Incidence

Early chronic glaucoma is more commonly encountered than is generally known. Investigation has revealed that it is third in the conditions causing blindness in persons over 40 years of age. It occurs almost as frequently as diabetes and is found in approximately 1 per cent of the total population. It is estimated therefore that there are 100,000 to 150,000 cases in the United States and approximately 1,000,000 in the world.[2] Of all ophthalmic cases glaucoma comprises about 1 to 2 per cent.[3]

Glaucoma occurs just as frequently in males and females. Usually it involves both eyes although one may be affected months or even years before the other. Glaucoma generally does not occur in persons under 40 years of age but it has been encountered in some young people. The incidence of onset increases rapidly in the years from 40 to 60 and then decreases so that the frequency is less at 70 years of age. Heredity in some appears to play a role. Studies of incidence in various races have thus far not shown any variation.[3]

Etiology

Chronic primary glaucoma remains such a problem because for many years it was thought that only one cause was responsible. Now it has been found that no one cause can be established as responsible for all stages of all cases of the condition. The three basic components which are considered responsible are constitution, environment and time. Considered under the heading of constitution are the hereditary characteristics and the functional activity of each individual cell or cell groups throughout life. Under environment are included the normal and abnormal physical and chemical influences affecting all cells. Under time are included the life cycle or duration of all cells singly or in groups in the various stages of life as well as their rate of destruction and replacement.[3]

Because glaucoma basically results from an imbalance between the entering and exiting of intra-ocular fluids its cause remained uncertain until more knowledge of the physical and chemical fundamentals of this process was obtained.[3]

Thus one authority defines primary glaucoma as "essentially a bilateral progressive constitutional degenerative ocular disease, generally characterized by increased intraocular tension, peripheral and central vis-

ual deterioration, disc excavation and variable vascular reactions."[2, 4-7] The intra-ocular filtering mechanism and the fluid exiting through the filter are involved to varying degrees. Individuals with glaucoma show abnormal vasomotor reactions at times of emotional disturbances. These reactions in turn affect the filterability of the intraocular fluids. It is generally agreed that glaucoma is precipitated or aggravated by emotional disturbances such as fear, worry, anger and anxiety. The condition occurs more frequently in emotionally high strung individuals who may or may not show symptoms of vasomotor instability or vascular degenerative changes. Glaucoma frequently accompanies the climacteric in both female and male.[2, 3]

Another authority, who does not consider glaucoma to be a disease, describes chronic primary glaucoma as "any high intra-ocular pressure in relation to the strength or weakness of the lamina cribrosa which is caused by some anatomic defect, usually congenital and almost always hereditary, not caused by accident, inflammation or any toxic condition."[1] Thus it may occur prenatally and become apparent at birth, in infancy or later in life as the lens grows naturally; as the tissues become more inelastic in aging; or as the tissues develop or degenerate without inflammation accompanied by the normal aging process. This author therefore states that chronic glaucoma (congestive or non-gestive) is an anatomic defect which causes the eye to fail in its functioning in the normal production and exit of the aqueous; to fail to meet the changes of aging; or to fail to withstand an unstable nervous system. Included in this description are prenatal, infantile, juvenile and adult glaucoma.[1]



Fig. 2. Same as Fig. 1 showing the angle of the Anterior Chamber in Congestive Glaucoma. a. Iris; b. Swollen ciliary processes.

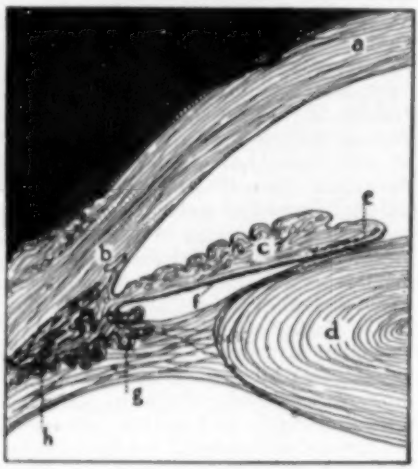


Fig. 1. Diagrammatic drawing showing the normal anatomical structure of the angle of the Anterior Chamber in the Normal Eye. a. Cornea; b. Canal of Schlemm; c. Iris; d. Lens; e. Sphincter m.; f. Dilatator m.; g. Ciliary processes; h. Ciliary m.

Symptoms and Diagnosis

It is important that chronic glaucoma be detected early in its development so that it can be arrested and the patient saved from blindness. Unfortunately, the symptoms are frequently obscure and may not be directly referable to the eye. They may be so mild in nature for months or years that the patient thinks nothing of

them. This insidious progress may not be detected until it is too late to remedy.

A first symptom observed by some glaucoma patients is the halo observed at night around a small light. This halo is made up of an outer red and inner blue component which form a ring around the light. This occurs when there is a slight corneal edema due to the increased tension. The eye or brow may have a feeling of fullness or pain at such times.

In other cases of chronic primary glaucoma the only symptom which may be noticed by the patient is that of a mild headache which is described as a fullness or heaviness. Headache is a symptom which is occasionally encountered by physicians. Most physicians first eliminate the possibilty of improper refraction. Chronic primary glaucoma should especially be considered in the etiology. The headache accompanying glaucoma usually is supra-orbital or frontal and may be unilateral or bilateral. It usually occurs in the evening and especially when the patient is in an environment of darkness or dim illumination. In some instances a headache may develop when the patient arises in the morning but when this occurs it usually lasts no longer than a half hour. Some vasomotor stimulus such as a hot or cold bath, strong coffee or an emotional disturbance may precipitate a headache.[3]

The patient may have observed that his vision has been affected and the physician should ascertain whether the patient has noticed hazy, foggy or diminished vision. This is particularly apt to occur at those times when a headache is brought on by one of the conditions described earlier. If the patient can recall very definitely that the headache and foggy vision occurred concurrently numerous times, presence of glaucoma should be considered. The sudden onset of presbyopia, or the necessity for frequent changes of glasses, should bring to mind the possibility of glaucoma.

Intra-ocular tension may be tested by means of the tonometer. However, palpation of the globe with the fingers should be routinely practiced. Since the use of the tonometer requires a local anesthetic instillation the routine examination should first be made.

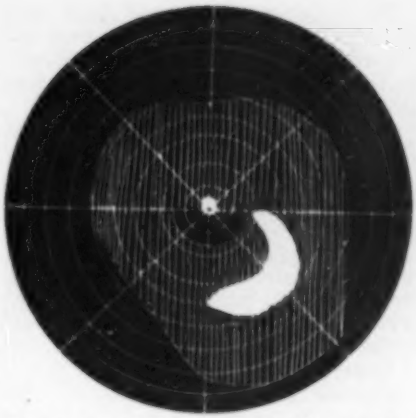


Fig. 3. Typical glaucoma field; showing Bjerrum's scotoma.

Testing of visual acuity must be done, using the Snellen chart. However, many glaucoma patients will not show any signs of decreased acuity in the early stages. It has been reported that patients with advanced glaucoma with fields so shrunken that they are nearly helpless may still be able to read 20/20 or 20/30 on the chart.[3]

Use of the ophthalmoscope is necessary to determine whether there is pallor or cupping of the optic nerve heads with sharp bending of the blood vessels or whether the retinal arteries are pulsating (differentiate from normal venous pulsation). Wide physiological excavation must not be confused with atrophy and cupping. Many patients do not show evidence of these signs until the condition is well advanced. Many cases which respond well to medications or surgery may never show any abnormal fundus findings.

A mydriatic should be used with extreme caution in dilating the pupil so as to aid in examining the eye with the ophthalmoscope if glaucoma is suspected because of the possibility of inducing an acute attack.[3] If it is necessary to dilate the pupil a mild non-cycloplegic mydriatic should be used, and when examination is completed countered with a miotic.

Determination of the visual fields, central blind spot and peripheral is invaluable in glaucoma and frequently alerts the oculist to the possibility of this condition when other concrete evidence is wanting.

With care and judicious use of present day refined perimetric techniques, using the perimeter and campimeter or tangent screen; varying the distance, size of object, and even illumination, certain scotomata or defects in the field may be elicited which are pathognomonic of glaucoma, or most certainly excite further clinical investigation into the possible existence of this condition. Some of these findings are:

Seidel Sign
Bjerrum Scotoma
Renne's Nasal Step
Arcuate Nerve Fibre Bundle Defects
Baring of the Blind Spot

In those cases where glaucoma is suspected but cannot be conclusively proven certain tests called lability tests designed to cause a rise in tension in susceptible eyes have been used. These include rest in the dark, ingestion of coffee, or excessive fluids, and the cold pressor test. Repeated tonometric measurements are made and readings above the normal for the instrument used are looked for.

Differential Diagnosis

The symptoms of chronic primary glaucoma may be confused very easily with those of any one of the following conditions: (1) refractive errors and eyestrain; (2) chronic sinusitis; (3) menstrual headaches, menopause or male climacteric; (4) conjunctivitis; (5) migraine; (6) neuralgia; (7) neurasthenia; (8) vascular hypertension; (9) chronic nephritis; (10) early uremia; (11) brain tumor; (12) iritis; (13) multiple sclerosis; and (14) syphilitic meningitis. The various simple diagnostic aids described previously are of some use in fairly uncomplicated cases but in most cases diagnosis can be established definitely only by the complicated procedures mentioned briefly above.

Therapy

If glaucoma is recognized in the early stages the prognosis is better. Even then and with the best of care, an opinion as to the future of any one case must be guarded.

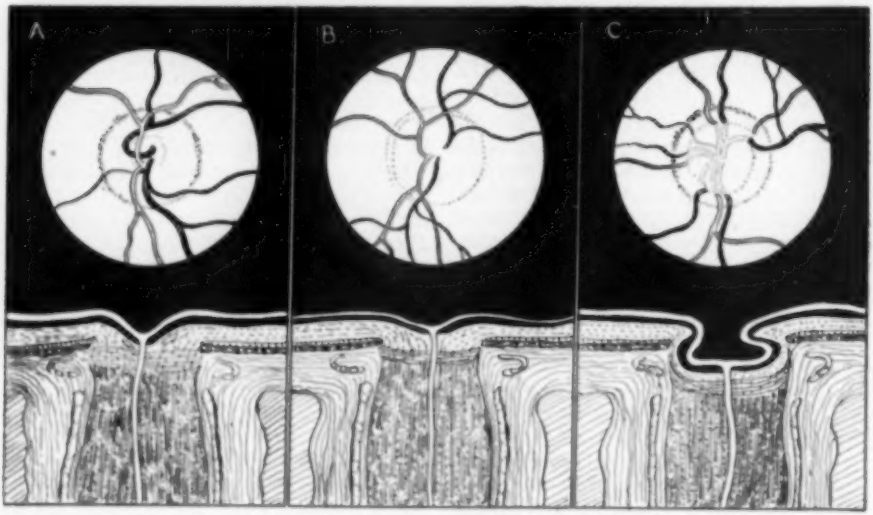


Fig. 4. Ophthalmoscopic views of Optic-Nerve Disk and corresponding longitudinal section. A. Normal disk; B. Disk in Optic-Nerve Atrophy; C. Disk in glaucoma.

Psychosomatic

Although it usually is necessary to have an ophthalmologist check the diagnosis and progress of therapy of a glaucomatous patient the family physician can play an important role in helping the patient psychologically because he is more familiar with the individual's home life, occupation, environment and emotional stability. Adverse psychological circumstances may be responsible for lack of response to treatment and to progression of the condition.

The glaucomatous patient must be impressed with the fact that he must lead a calm life both physically and mentally in order to avoid eventual blindness. He must learn to be moderate in his daily physical and mental habits. Emotional upsets should be avoided.

Stimulants

Some advise moderation in the use of stimulants and particularly caffeine[2]. Others recommend that coffee, tea and alcoholic beverages be avoided.[8]

Adjuncts

Constipation should be eliminated. Any cardiovascular diseases should be kept under control as much as is possible.[8-11]

Miotics

The aim of specific therapy in chronic primary glaucoma is to reduce the increased tension to normal as quickly as possible along with relief of pain and visible symptoms such as redness and restoration of function if possible (or at least stopping any further loss).[8]

Use of miotic drugs is the first step in treating glaucoma. If they fail then surgery may be indicated. Miotics act by constricting the sphincter of the iris and the filtering angle therefore is opened to a maximum. Because the iris plays a minor role in filtration the increased exposure of its surface is also helpful.[12] The clearance of the filtering angle allows the aqueous to pass more easily into the canal of Schlemm through the spaces of Fontana. In this manner the intra-ocular pressure is reduced. The first time a miotic is used the patient should remain for several hours

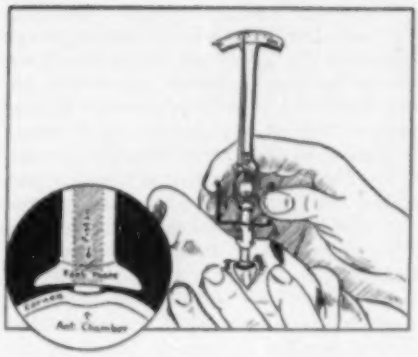


Fig. 5. Drawing demonstrating use of tonometer.

of observation until there is evidence that the pressure is being reduced. Immediate effects of a miotic on any glaucomatous patient should always be noted as well as the effects in later weeks and months. A periodic check of the pressure and the visual fields is necessary to determine the response to therapy and to control the strength of drug used as well as the frequency of its administration. It may be necessary for the patient to use a non-irritative miotic instillation for many years in order to maintain the reduced tension. In others further medication may be unnecessary.[1, 2, 8]

In prescribing a miotic one which reduces pressure should be selected. Then the minimum amount which is necessary to maintain normal pressure and an intact visual field should be determined. It may be necessary to try several miotics since the patient may be sensitive or may become sensitive to some particular ones. The eye may become sensitive and develop a quiet iritis. This also reduces vision. Posterior synechiae may result from this iritis also and impede the flow of aqueous into the anterior chamber. This in turn pushes the iris forward and narrows the filtering angle. Before this iritis is produced the miotic may cause an allergic conjunctivitis. Some miotics may cause congestion of the intra-ocular vessels and increase the tension in late stages of glaucoma.[1]

There are numerous miotics available. Generally they belong to the class of drugs known as the autonomic drugs which act on the autonomic effector cells which are not stimulated directly by nerves. In this manner there is brought about a chemical mediation of the nerve impulses in the body. The parasympathetic system and possibly a few sympathetic fibers innervate the sphincter of the iris and the ciliary muscles. They pass along from nucleus N.III through the inferior branch of N.III by way of the ciliary ganglion in which the acetylcholine is formed. Innervation of the dilator pupillae is brought about by the sympathetic fibers branching out from the cervical sympathetic fibers running along the carotid and ophthalmic arteries through or by the ciliary ganglion to the long ciliary nerves and on to the end plates. The autonomic drugs include the cholinergic and adrenergic groups.[13]

The cholinergic group of drugs acts less specifically on the effector cells and more so on the parasympathetic system. They are also known as parasympathomimetics because in producing miosis they imitate the effect of parasympathetic stimulation in which acetylcholine is produced at the nerve endings and myoneural junction in order to stimulate the effector cells. When the sphincter pupillae muscle is affected therefore miosis occurs. The acetylcholine in turn is destroyed by cholinesterase which is present in almost every portion of the body. This chemical also inactivates any acetylcholine administered by injection. Other drugs which are carbamate compounds rather than choline derivatives act by destroying the cholinesterase. In this manner the acetylcholine forms normally and naturally stimulates the parasympathetic system.[13]

a. Acetylcholine and Derivatives

Acetylcholine[3] itself has been used in glaucoma therapy in some few instances but it has fallen into disuse because of the production of derivatives which are longer-acting.

Acetyl - beta - methylcholine chloride U.S.P. is used sometimes in the therapy of glaucoma in a strength of 5 to 20 per cent.[15-25] It is contraindicated in cases with a history of allergy or asthma. Carbachol, U.S.P. also is used in 0.1 to 1.5 per cent strength in a 1:3000 solution of benzalkonium chloride, U.S.P.[9, 14, 16] It may be indicated as an alternative if the patient develops a sensitivity to pilocarpine or physostigmine. One drop of a 1.5 per cent solution is instilled into the eye at intervals of 8 to 12 hours. If an ointment form is desired 0.5 Gm. of the drug may be incorporated in 33 Gm. of petrolatum U.S.P. This is applied twice a day. Carbamylcholine chloride is to be used only by corneal instillation and should be discontinued at the first sign of corneal irritation. It is contraindicated if there is corneal injury. These drugs also may be used in combination with others with which they have a synergistic effect. These derivatives of acetylcholine are not so easily destroyed by cholinesterase and therefore are longer-acting. Because atropine blocks impulses to the effector cells and impulses from acetylcholine it can be used as an antidote for the cholinergic groups of drugs. In this particular instance if necessary it should be given parenterally in doses of 0.4 to 0.6 mg. and repeated if necessary.

b. Pilocarpine

One of the older drugs used in the therapy of chronic primary glaucoma is pilocarpine hydrochloride, N.F. or nitrate, U.S.P.[13, 17] It is administered topically in a solution containing 0.5 to 2.0 per cent or in ointment form. Some state that it is used in 1 to 10 per cent solutions. However, for long periods of time the 1 per cent, 2 per cent and 4 per cent strengths are used and may be prescribed as follows:

	Gm. or c.c.		
	1%	2%	4%
Pilocarpine nitrate	**0.30**	**0.60**	**1.20**
Chlorobutanol	**0.15**	**0.15**	**0.15**
Sodium chloride	**0.33**	**0.27**	**0.14**
Add distilled water	**30.00**	**30.00**	**30.00**

This is instilled 4 or 5 times daily (once before sleep and immediately after awakening).[13] Pilocarpine acts directly on the cholinergic effector cells and is not affected by cholinesterase. It also is inhibited by atropine and related drugs. Pilocarpine increases perspiration thus increasing the

quantity and thinness of the bodily secretions making them more easily filtered. Pilocarpine can be given over a long period of time. In some cases the use of pilocarpine may be made more effective by giving carbachol for a short time as an alternate. Some report that a 10 per cent solution of pilocarpine is as strong as D.F.P. (a new drug to be discussed later).[18] Pilocarpine is available in powder, ophthalmic or hypodermic tablet or ointment form.[19-21]

c. Physostigmine

Physostigmine salicylate, U.S.P., commonly known as eserine, is another drug employed for many years.[5, 18] It is a carbamate compound and therefore acts as described previously. It is administered topically in strengths of 0.2 to 0.5 per cent in solution. (Some state 1 per cent[18] but this is generally used in acute glaucoma). In chronic cases it is preferable to use even as little as 0.02 per cent if such a strength is effective. Physostigmine salicylate may be prescribed as follows:

	Gm. or c.c.
Physostigmine salicylate	**0.05**
Chlorobutanol	**0.05**
Sodium bisulfite	**0.01**
Boric acid	**0.22**
Add distilled water	**10.00**

This solution is administered in doses of one drop two or three times a day (once before sleep and immediately after awakening).[18] Physostigmine is available as the alkaloid alone and in 0.25 per cent strength in an ophthalmic ointment; as the salicylate in power, hypodermic and ophthalmic tablet and ophthalmic ointment forms.[22-25] The sulfate is available also in hypodermic tablets and as an ophthalmic ointment (0.5 or 1 per cent).[26, 27]

d. Neostigmine

Neostigmine bromide is another of the drugs which inhibits cholinesterase because it is a carbamate compound.[5, 18] Therefore, it resembles physostigmine in activity. It reduces intra-ocular pressure but causes less constriction of the pupil. It is administered in a 3 per cent solution in chronic glaucoma. In some cases of glaucoma it may be desirable to administer a choline compound to stimulate the effector muscle which in turn contracts the pupil and a drug which prevents the destruction of acetylcholine by cholinesterase. In such cases neostigmine bromide 3 per cent may be prescribed along with 10 per cent acetyl-beta-methylcholine. Neostigmine is reported to cause less sensitization than some of the other drugs and may be used particularly when the patient cannot tolerate physostigmine.[5, 8, 18] Neostigmine bromide is available in a 5 per cent ophthalmic solution with 1 per cent boric acid. For therapy of chronic glaucoma it is diluted to 3 per cent.[28] It is contraindicated in patients with asthma.

e. Furfuryltrimethylammonium Iodide

Furfuryltrimethylammonium iodide acts similarly to acetyl - beta - methylcholine in that it acts directly. Because of its unique resistance to cholinesterase it is longer acting. It is effective as a miotic without adjuvants such as physostigmine or neostigmine. A 10 percent solution is believed to be as effective as pilocarpine 2 per cent, neostigmine 5 per cent and acetyl - beta methylcholine 20 per cent.[19, 29-31]. When the intra-ocular tension is 35 mm. of mercury or more this drug is administered as a 10 per cent solution at 15 minute intervals for 2 hours and then 3 to 5 times a day thereafter. If the tension is lower than 35 mm. it is instilled 3 to 5 times daily with or without adjuvant drugs. It has been reported that this drug successfully has reduced tension or has retarded the progress of the condition in patients with glaucoma which did not respond to other miotics and who were considered poor surgical risks. As a result of this study it was concluded that furfuryltrimethylammonium iodide is indicated for those patients on whom other miotics are only partially successful and in emergencies in acute glaucoma. It is non-irritating and may be given in conjunction with other miotic drugs and particularly, D.F.P.[5] It is contraindicated in patients with asthma. This drug is supplied in a 10 per cent buffered aqueous solution with a preservative, sodium ethylmercurithiosalicylate.[32]

f. Diisopropyl fluorophosphate

One of the newest drugs to be made

available for the therapy of glaucoma is diisopropyl fluorophosphate (D.F.P.) It is a powerful miotic and considered to be 5 times stronger than a 2 per cent solution of physostigmine.[2, 8, 21-24] It is indicated in the control of tension in glaucomatous aphakic eyes; preoperative control of intraocular tension in glaucoma; and as an antidote against the harmful effects of atropine on preglaucomatous and glaucomatous eyes. The usually required dosage in the treatment of glaucoma is one to three drops of 0.1 per cent solution in the glaucomatous eye every eight to seventy-two hours. It is suggested that, whenever possible, instillation be made at night before retiring, so that blurring of vision will be less disturbing. Blurring of vision is caused by spastic accommodation and transient myopia. Occasional headaches also may follow its use. Although this drug is not irritating locally it is advisable that it be used as infrequently as is possible (twice daily to twice weekly). One worker reports that diisopropyl fluorophosphate promptly reduced the tension in some 20 cases. However, in 4 cases the tension reducing property decreased considerably during the first 3 months. In these cases the drug either was discontinued or was supplemented with furfuryltrimethylammonium iodide, pilocarpine or one of the other drugs.[8] Because diisopropyl fluorophosphate is unstable in aqueous solution it is available in 0.1 per cent strength in peanut oil which is for ophthalmic use only.[25]

g. Adrenergic Groups

The adrenergic group of drugs act as mydriatics rather than miotics and therefore are not indicated in glaucoma therapy.

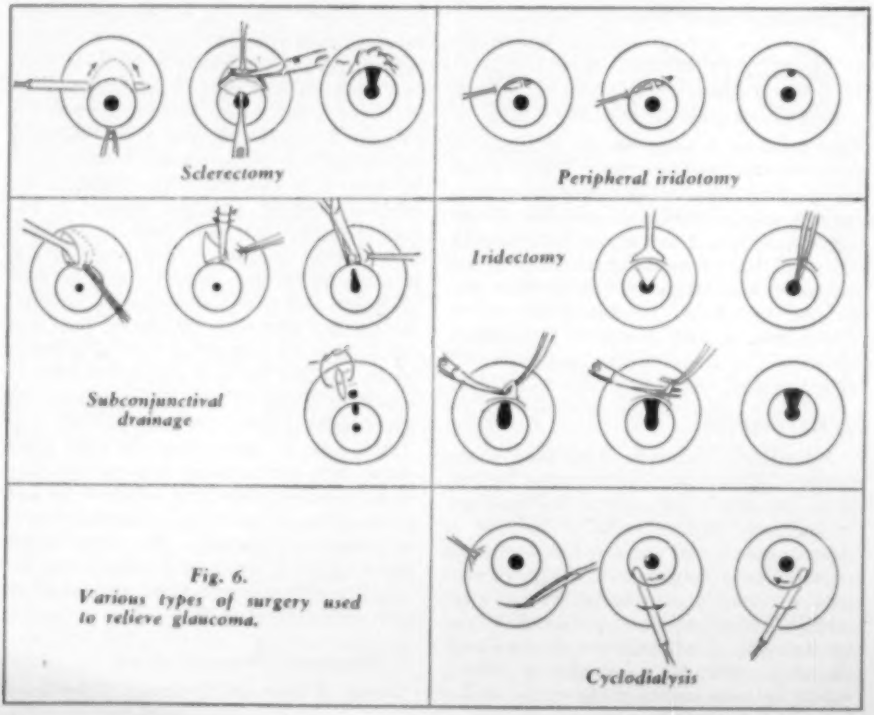


Fig. 6.
Various types of surgery used to relieve glaucoma.

SURGERY

In those glaucomatous patients whose condition does not respond to therapy with a miotic drug or drugs surgery is indicated. A chronic primary glaucoma may be controlled for months or years by means of miotics and then eventually require surgery as the drugs prove inadequate or ineffective. This development is evidenced by persistence of increased tension or by loss of visual fields.[8]

Just as the selection of the proper drug depends upon the condition and the individual patient so does the selection of the type of surgery. Any one of the following may be indicated: trephine, iridencleisis, iridosclerotomy, basol iridectomy, cyclodialysis and goniotomy.[1-2]

Most of these operations are directed toward making an artificial channel to provide drainage of the aqueous fluid from the globe. This aids in the maintenance of decreased intra-ocular tension. The operation may be done under local anesthesia but if the patient is too apprehensive short-acting intravenous anesthesia may be used. The patient sometimes may be allowed to sit up or even get out of bed the next day.[3]

The prognosis following surgery in early cases of chronic glaucoma is generally good. However, this decreases in direct proportion to the advance of the condition.[2]

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Plan to Increase Number of General Physicians Described

A plan to increase the number of general physicians and family doctors practicing in this country was recently described by Dr. Currier McEwen, Dean of New York University College of Medicine, a unit of the New York University-Bellevue Medical Center, who said that this program is now being put into effect at the College.

Dean McEwen termed the role of medical schools in the training of the general physician and family doctor a "major current issue," and said: "Even the public is well aware of the trend toward specialization which has been increasing in recent years. An important cause of the trend can be traced to the medical schools themselves. There is an apparent lack of concern on the part of the schools for the training of the general physician and general practitioner."

Dean McEwen said that "There is a very real interest in the problem of the general practitioner in most medical colleges, as illustrated by the frequent discussion of the topic at meetings devoted to medical education; but this expressed interest is neutralized by teaching and staffing practices."

Pulmonary Tuberculosis

Modern Concept and Recent Advances in Treatment

VI

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In the previous articles in MEDICAL TIMES* we touched on the clinical and sociological aspects of pulmonary tuberculosis. We discussed the modern trend to institute active therapy as soon as a definite diagnosis is established; to institute measures that will render the patient free of sputum or to render the sputum free of tubercle bacilli in the shortest time possible. We stressed the goal to remove the patient from the category of a "menace" to his family or the community.

Someone said that "tradition wears a long beard" and that "old customs die hard." For years the propaganda has been dinned into the ears of the American public that "going away from home" is the best method to attain a cure for the person afflicted with tuberculosis. Climate, altitude and scenery were stressed as the requisites in the "taking of the cure." The greater the reduction in the incidence and mortality from tuberculosis the greater have been the efforts to stress that "climate's the thing." But in spite of all this studied effort to sell the sanatorium idea to the public, an ever increasing number of tuberculous individuals are seeking the cure at hospitals near their homes, or are literally "taking the cure at home."

Many factors have entered into this change of attitude on the part of the public and the medical profession as regards the treatment of tuberculosis:

1. The surveys conducted by agencies, both public and private, revealed a large number of minimal cases of pulmonary tuberculosis. Many clinicians find that these cases do exceptionally well at home if given the proper care.

2. In that proportion of cases which show progression of the disease, the use of streptomycin has proven to be a potent weapon in the control of the tuberculous process.

3. In that proportion of cases which go on to caseation and cavitation, the greater use of collapse therapy has placed in the hands of the physician a means to control the bacillary or open case quickly, and to remove it from the category of a menace to the contacts.

4. Another important factor has been the establishment of departments for thoracic surgery in many general hospitals.

5. The recognition of the fact that thoracic surgery can cope with the cavitary cases of pulmonary tuberculosis more effectively and more positively than can be accomplished by the rest cure alone.

In a prophetic vein we stated several years ago, in an article in the MEDICAL TIMES,* "It is within the realm of possibility that a chemotherapeutic or antibiotic agent will be found that will exert a direct effect on the tubercle bacillus, and that the exudative lesion will be conquered before cavitation and excavation begin. But once tissue destruction has taken place and a cavity formed, it is hard to conceive of a method short of collapse therapy that will be of any real benefit."

We discussed briefly the use of artificial pneumothorax, operations on the phrenic nerve, pneumoperitoneum and internal pneumolysis.

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Vol. 73, No. 10, October, 1945.
Vol. 74, No. 4, April, 1946.
Vol. 74, No. 4, May, 1946.
Vol. 75, No. 5, May, 1947.

* Page 96, Vol. 74, No. 4, April, 1946.

In this paper we shall discuss the cavitary case and the use of thoracoplasty for its control.

The factors that have made thoracic surgery, for the treatment of pulmonary tuberculosis, a safe procedure, are:

1. Progress in anesthesia and a greater knowledge of the physiology of respiration.
2. Pre-operative and post-operative use of the antibiotics.
3. The facilities made available by blood banks for the greater use of blood and plasma.

A priori we may state that thoracoplasty is reserved for those cases of cavitary pulmonary tuberculosis that do not respond to artificial pneumothorax, where phrenic paralysis would be futile, and cases in

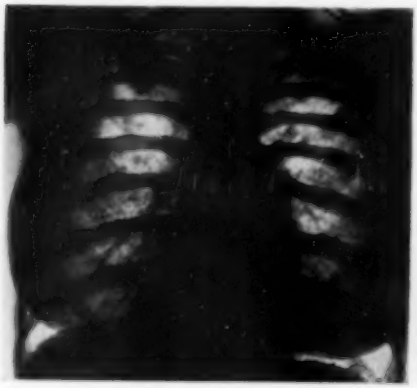


Fig. 1. Case I. Theresa B. Age 23. 1-11-'46.

This film shows scattered infiltration in both pulmonary fields, more extensive and more conglomerate in the right upper lobe. There is evidence of beginning stabilization of the tuberculous process except for the right subclavicular zone. This is the end result of nearly five years of bed rest.

which pneumoperitoneum would hardly be of value because of the extent, location and size of the tuberculous lesion.

Although these reversible measures and their institution and trial will not cause any untoward effects in most cases, in many instances thoracoplasty is the method of choice without any preliminary trial of the temporary collapse measures.

Our hesitancy to resort to thoracoplasty has been mainly due to the presence of exudative components in the area involved or to the presence of a contralateral spread.

However, a radical change has taken place in our selection of cases for thoracoplasty. It is no longer advocated that a lesion in order to be suitable for collapse therapy of a permanent nature, must be well stabilized. With the use of streptomycin the picture becomes so altered, and in such a comparatively short period of time, that thoracoplasty can be performed with safety, and that the operative procedure need not be a race with time. We no longer do thoracic surgery with an eye on the clock. We have come to consider thoracoplasty from a new angle—thoracoplasty to fit the case rather than a set method of extraperiosteal rib resection.

The following cases are illustrative of our point of view:

Case I. Theresa B. Age 23. The history of this case begins in June, 1941, when she was first diagnosed as tuberculous. In August of the same year she was admitted to a sanatorium. Artificial pneumothorax was tried but no free pleural space was

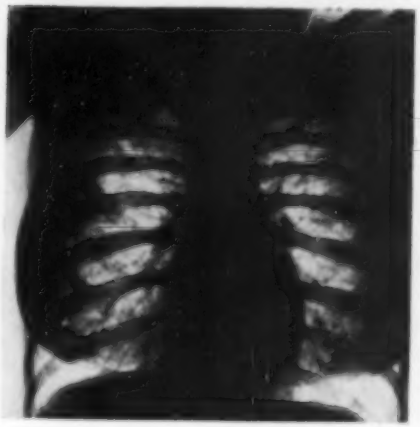


Fig. 2. Case I. Theresa B. 2-22-'46.

Now a distinct cavity developed in the soft area in the first interspace, just below the clavicle, in the right upper lobe near the periphery of the lung.

found. She was then placed on a regimen of complete bed rest. She left the sanatorium in June, 1942 as an "apparently arrested" case. Following her discharge from the sanatorium she followed the "rest cure" at home. When she came to our attention in May, 1943, the condition had progressed and reactivation was evident. She weighed 93½ pounds. Sedimentation rate showed a drop of 30 mm. in the first hour (Westergreen Method). Sputum was negative for tubercle bacilli both by smear and culture. Pneumoperitoneum was instituted May 13, 1943 and was continued until March 11, 1944. An adhesive peritonitis developed gradually and forced the abandonment of this form of therapy. Some amelioration did result, and a modified regimen of the "rest cure" was continued until January, 1946.

At this time examination revealed increase in moisture in the right upper lobe. Rales were numerous, moist and crackling, cough more annoying, and there was an increase in expectoration. X-ray film taken January 11, 1946 (Fig. 1) shows scattered infiltration in both pulmonary fields, more extensive and more conglomerate in the right upper lobe. The picture that this x-ray film presents is the result of five years of bed rest.

In February, 1946, a distinct cavity developed in the "soft" area in the right upper lobe, at the level of the first interspace in the midclavicular line (Fig. 2). For the first time the sputum became positive for tubercle bacilli. Her weight at this time was only 96 pounds. On 3-13-'46 a one-stage thoracoplasty was done on the right side with the resection of small segments of the first four ribs. Obliteration of the cavity occurred, and sputum conversion took place at the end of two weeks time. From then on her progress was steadily upward. She began to gain in weight and strength. Film taken 10-29-'47 (Fig. 3) shows the end results of a "tailored" thoracoplasty. There is slight compression of the apex as a result of the extraperiosteal resection of the first four ribs. There is no evidence of cavitation. Where the cavity previously existed a dense linear scar can now be seen.

This case is illustrative of the fact that complete quiescence of the lesion is not a requisite for a limited thoracoplasty. Although the lesion may be partly exudative, thoracoplasty can be resorted to. The degree of rib resection should be sufficient to cause obliteration of the cavity without sacrificing too great an amount of lung tissue by the collapse measure. In this instance the cavity was near the periphery of the lung, and the removal of small sections of rib was sufficient to bring about the excellent results.



Fig. 3. Case I. Theresa B. 10-29-'47.

Shows the result of a limited thoracoplasty done on 3-13-'46. There is only slight compression of the apex as a result of the extraperiosteal resection of small segments of the first four ribs. There is now no longer any evidence of cavitation. Where a cavity previously existed, a dense linear scar can be seen. Sputum conversion took place in a very short time after this procedure.

Case II. Emily Z. Age 16. This girl comes from a family several of whose members had tuberculosis. One sister died of pulmonary tuberculosis when Emily was nine years of age. Another sister died of pulmonary tuberculosis when our patient was twelve years of age. She has been kept under observation at various chest clinics since the discovery of tuberculosis in this family. In November, 1945 an acute exudative tuberculous lesion developed in the left apex. She was admitted to a sanatorium

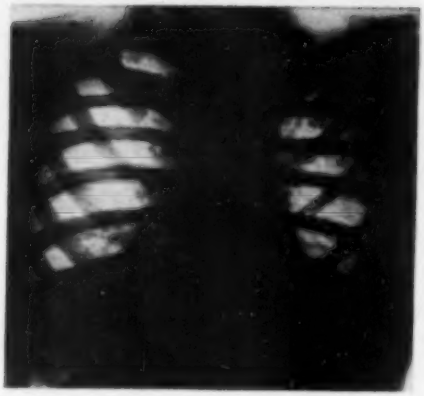


Fig. 4. Case II. Emily Z. Age 16. 5-13-'48.

This film shows a tuberculous process in the left upper lobe with distinct cavitation occupying nearly the whole apex and part of the subclavicular zone. There are a few scattered calcified nodules in the left upper lobe, but most of the lesions are acute and exudative.

where she remained until November, 1946. During her stay at the institution, artificial pneumothorax was established on the left side. This was limited in extent and was soon abandoned.

She first came to our attention on 5-12-'48. X-ray film dated 5-13-'48 (Fig. 4) shows a tuberculous process in the left upper lobe with a large cavity occupying the whole apex and part of the sub-clavicular zone. There are a few scattered calcified nodules in the left upper lobe, but most of the lesions noted are nodular and exudative in character.

On 6-16-'48, after a two week period of pre-operative preparation and the use of streptomycin, a one-stage thoracoplasty was done in which large sections of the first five ribs were removed. Obliteration of the cavity took place readily, and the sputum became free of tubercle bacilli within a week after the operation.

Such a lesion, if left to its own devices, and if resort was had to rest cure alone, would have in all probability resulted in greater cavitation and the spread of the tuberculous process to other parts of the lung. Resort to thoracoplasty obviated this possibility. The closure, or rather the obliteration, of the cavity in this case was a foregone conclusion since the cavity walls were thin and unresistant to pressure.

X-ray film taken 3-1-'49 (Fig. 5) shows the end results. The degree of compression in this case and the sacrifice of lung area are greater than in the previous case because the cavity we had to deal with was larger. Its location necessitated the removal of greater lengths of rib than in the previous case. In spite of her youth no serious scoliosis resulted. At present her weight is 151½ pounds. Just prior to the thoracoplasty she weighed 120½ pounds. Her sedimentation rate now is within normal limits. Thanks to the Pennsylvania State Rehabilitation Bureau she is now enrolled in a School of Beauty Culture learning to become a hair dresser.

Case III. Serilla L. Age 21. This girl was taken ill in March, 1943. She was admitted to a sanatorium in Maryland in September of 1943. She was discharged from the sanatorium as an "arrested case" in March, 1945. She then obtained employment in a government bureau in Wash-

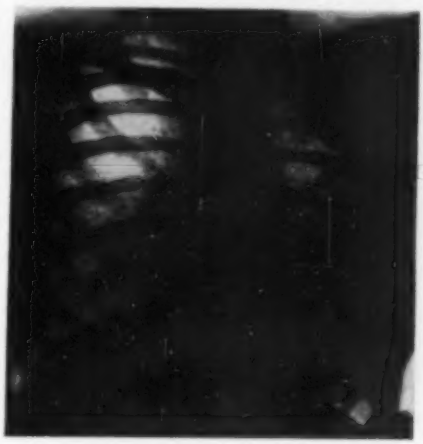


Fig. 5. Case II. Emily Z. 3-2-'49.

The end results of a one-stage thoracoplasty with extraperiosteal resection of the first five ribs. This resulted in sputum conversion and the rapid return of this girl to normal health.

ington, D. C., and worked steadily until August, 1945, when she noticed a return of previous symptoms of lassitude, cough, night-sweats and loss of weight. Physical examination, confirmed by x-ray film on 2-7-'46 (Fig. 6), revealed an acute fibrocaseous cavitary tuberculous lesion involving the whole left upper lobe and a pneumonic process in the left base. Temperature was 102 to 103 every afternoon. Cough was excessive, sputum profuse and positive for acid-fast bacilli. Sedimentation rate was 103 in the first hour (Westergreen Method). Artificial pneumothorax on the left side was not feasible because of complete adhesive pleuritis.

A crush of the phrenic nerve on the left side was done on 2-15-'46. This resulted in elevation of the left hemidiaphragm which was further enhanced by the use of pneumoperitoneum. X-ray film taken 3-21-'46 (Fig. 7) shows elevation of the left hemidiaphragm and air from the pneumoperitoneum beneath the diaphragm, causing displacement of the stomach downward, and distinctly outlining the spleen. Numerous adhesions can be seen between the stomach and the left hemidiaphragm and between the spleen and the stomach. Since the pneumoperitoneum seemed to be of little value it was soon abandoned.

In the left apex a circular cavity now became visible. In the contralateral lung an acute exudative spread has taken place in the lower part of the right upper lobe. The use of streptomycin was now resorted to, and its administration was continued until 6-16-'46. This resulted in steady and gradual improvement in the patient's physical condition. Temperature subsided to normal, cough became less annoying, sputum less marked, the pneumonic process in the left lower lobe seemed to undergo resolution, and she was now considered suitable for thoracoplasty.

On 7-2-'46 a one-stage thoracoplasty was done in which the first four ribs were



Fig. 6. Case III. Serilla L. Age 21. 2-7-'46.

Three years after discharge from a sanatorium, for a minimal tuberculous lesion in the left apex, this condition was found. An acute fibrocaseous lesion in the left upper lobe and a pneumonic process in the left lower lobe. There were signs of beginning cavitation in the left upper lobe.



Fig. 7. Case III. Serilla L. 3-21-'46.

A phrenicectomy was done on the left side and supplemented by pneumoperitoneum. A distinct circular cavity, sharply outlined, can now be seen in the left upper lobe. Although the cavity was little affected by these measures, marked improvement occurred in this patient's condition. She became less toxic, and a slight gain in weight resulted. The pneumoperitoneum was abandoned soon after this film was taken because it was limited by numerous adhesions between the under-surface of the hemidiaphragm and the stomach, and adhesions between the stomach and the spleen.

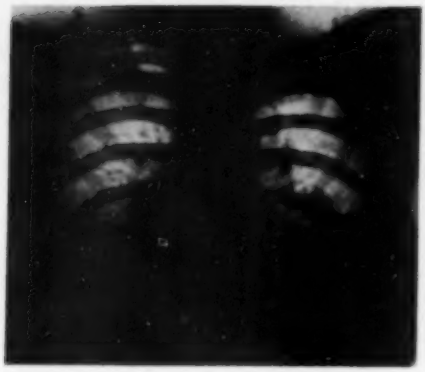


Fig. 8. Case III. Serilla L. 12-30-'48.

This x-ray film shows the end results of the one-stage thorocoplasty done 7-2-'46. Large segments of the first four ribs were removed extraperiosteally. There is no evidence of cavitation beneath the regenerated ribs. The pneumonic lesion, seen in previous films, is now no longer evident. For the past year she has been gainfully employed as a secretary and typist.

resected extraperiosteally. Large sections were removed including the transverse processes. The post-operative course was uneventful. Gradual improvement took place with a slight gain in weight. At the time of the operation she weighed 116 pounds. Her present weight is 122 pounds.

X-ray film taken 12-30-'48 (Fig. 8) shows the end results of the thoracoplasty. There has been marked absorption of the exudative components of the tuberculous lesion on the left side. The left base is now clear. The left hemidiaphragm can be visualized. It is slightly elevated as compared to the right. There is evidence of beginning calcification in the hilar region. There is excellent compression of the left upper lobe as a result of the operative procedure. There are no signs of cavitation beneath the regenerated ribs.

A fulminating tuberculous process was brought under control by the judicious combination of collapse therapy and the use of streptomycin.

Case IV. William B. Age 28. This case, in the pre-antibiotic era, would have been considered as hopeless. We have here a man whose disease is extensive and fulminating in character, and whose clinical course has been steadily downward for the past three months. He was admitted to a sanatorium in June, 1945. Artificial pneumothorax was established on the right side, but was abandoned after two or three refills, as it was found ineffectual.

X-ray film taken 8-9-'45 (Fig. 9) shows scattered infiltration involving nearly all lobes of the lung with a pneumonic process in the right upper lobe; hemoptysis frequent and profuse;, temperature hectic; night sweats frequent and debilitating. He left the sanatorium against advice. On 9-28-'45 phrenic exeresis was done on the right side. This was supplemented by pneumoperitoneum. As a result of this procedure a marked improvement took place in this man's condition. At the same time that these measures were taken, streptomycin was administered—one gram a day divided in three doses.

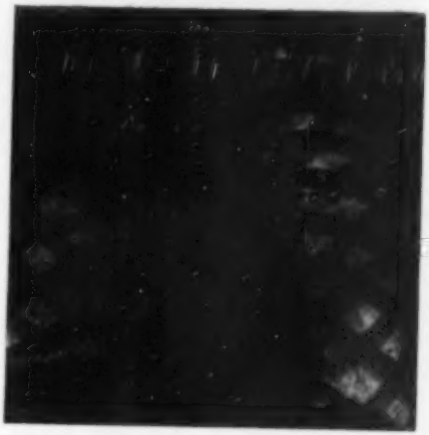


Fig. 9. Case IV. William B. Age 28. 8-9-'45.

Tuberculosis of an acute exudative type, involving practically both pulmonary fields from the apices to the bases. In the right upper lobe the lesion is pneumonic in character. Artificial pneumothorax, on the right side, was tried in the sanatorium, but was soon abandoned because of the presence of numerous adhesions which prevented adequate collapse of the right upper lobe, and did not control the frequent and copious hemoptysis.

X-ray film taken 6-26-'47 (Fig. 10) shows marked elevation of the right hemidiaphragm as a result of the pneumoperitoneum supplementing the phrenic paralysis. There has been marked absorption of the exudative processes in both the right and left pulmonary fields, with a beginning tendency towards fibrosis. However, the lesion in the right upper lobe went on to cavitation in spite of these therapeutic measures. Pneumoperitoneum was abandoned because of its failure to prevent and eventually to close the cavity in the right upper lobe.

X-ray film taken 11-13-'48 (Fig. 11), after the abandonment of pneumoperitoneum and the absorption of the air, shows marked elevation of the right hemidiaphragm and an irregularly shaped cavity that has scooped out the lung tissue of practically the whole apex and subclavicular zone. However, the patient's physical condition now was so improved that he was considered suitable for thoracoplasty.

On 12-22-'48 extraperiosteal resection of the first four ribs was completed together with the removal almost completely of the transverse processes.

A 2nd-stage thoracoplasty, with the removal of large sections of the 5th, 6th and 7th ribs, was done on 1-12-'49.

X-ray film taken 2-18-'49 (Fig. 12) shows the end results of the first and second stage thoracoplasty. A large cavity occupying the apex and the subclavicular zone has been obliterated. There has been further improvement in the character of the lesion in the contralateral lung.

In this case each measure taken brought about some amelioration and made the next step possible. The value of the use of streptomycin has never been better exemplified than in this case. With the obliteration of the cavity in the right upper lobe, the restoration of this man to apparent good health has been accomplished.



Fig. 10. Case IV. William B. 6-26-'47.

Marked improvement in the exudative character of the tuberculous process has taken place. There is absorption of the scattered infiltration in both pulmonary fields. Clinical and roentgenological evidence of improvement followed the crushing of the right phrenic nerve and the institution of pneumoperitoneum. However, these measures failed to prevent extensive "scooping out" of the right apex and subclavicular zone. An irregularly shaped cavity is now visible.

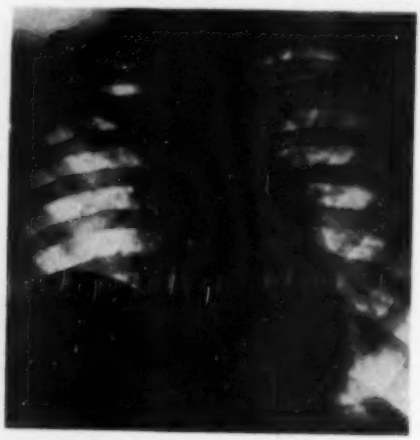


Fig. 11. Case IV. William B. 11-13-'48.

Pneumoperitoneum was abandoned when failure to effect cavity closure, in the right upper lobe, became apparent. This film was taken after complete absorption of the intraperitoneal air. The right hemidiaphragm remains elevated to the level of the 8th rib posteriorly.

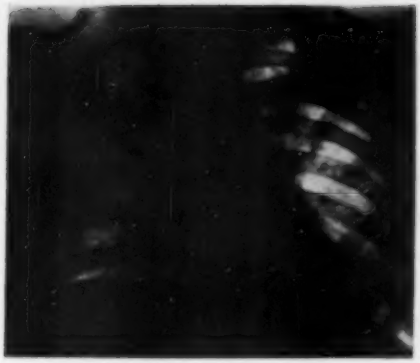


Fig. 12. Case IV. William B. 2-18-'49.

This film shows the end results of the 2nd-stage thoracoplasty. A large cavity occupying nearly the whole right upper lobe has been obliterated. Excellent results were obtained in this case by the judicious use of phrenic paralysis, pneumoperitoneum, and the administration of streptomycin. Each step brought about some amelioration that made the final resort to thoracoplasty a safe procedure.

Case V. Mrs. Margerine F. Age 33. This is a most interesting and unusual case. It exemplifies the indomitable will to live and to overcome almost insurmountable obstacles. This is the case history of a very intelligent, highly intellectual, gifted woman, a writer and a poetess.

Her medical history begins in 1943. It was then discovered that she had a small tuberculous infiltration in the left upper lobe. She was admitted to a sanatorium in Maryland, and she remained there until April, 1944. Pneumothorax was tried but no free pleural space was found. In a very short period of time a tension cavity developed. A phrenicectomy on the left side was performed at the sanatorium. This procedure had no effect on the cavity. Each month the cavity in the left upper lobe seemed to grow larger until only a mere shell, outlining the left upper lobe, remained. She was allowed to leave the sanatorium. She was apprised of the serious character of her "lung trouble" and its ominous prognosis. Then began a series of pilgrimages to various hospitals and clinics. Examination followed examination —x-rays were taken frequently. She was told after such examinations that she must wait until her physical condition improved so that her condition could be treated surgically. But the improvement did not seem to come. She gradually grew thinner and weaker. She finally went back to her alma mater, the Hampton Institute of Virginia, to enlist the aid of the patroness of the school, the venerable and kindly Mrs. Phoenix.

She was referred to us in April, 1944. This is the picture that she presented: an emaciated, debilitated colored girl, then about twenty-eight years of age, who looked much older. We were of the same opinion as all the others that she was a poor surgical risk. However, her insistence was so great that something be done in her case that we finally decided to set in motion the following series of procedures that

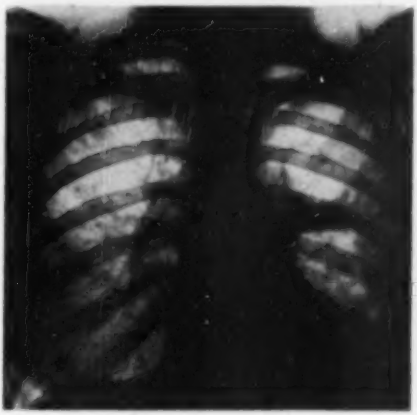


Fig. 13. Case V. Mrs. Margerine F. Age 33. 4-9-'44.

This film was the first in a series of x-ray films taken of this patient after she left the sanatorium in Maryland. It shows the result of a tension cavity that developed in the left upper lobe in 1943. The whole left upper lobe is one giant cavern. Scattered infiltration is evident in the left lower lobe. The left hemidiaphragm is slightly elevated as a result of a phrenicectomy done at the sanatorium. A scattered nodular, partly stabilized tuberculous process is present throughout the right pulmonary field.

culminated in her restoration to a fair degree of health.

An x-ray film taken 4-19-'44 (Fig. 13) showed a large tension cavity that almost completely replaced the left upper lobe. There was some scattered diffuse infiltration in the left lower lobe. The left hemidiaphragm was slightly elevated as a result of the previously performed phrenicectomy. The daily amount of expectoration was voluminous, and yet the cavity did not show a fluid level at any time we examined her. Resorting to postural drainage during the day, and sometimes even during the night, she kept the cavity fairly dry. However, the cough was extreme and was little relieved by opiates. A feature of this case which is hard to explain is that in her whole career no hemoptysis of any severe degree occurred. Only on rare occasions was there slightly blood-tinged sputum.

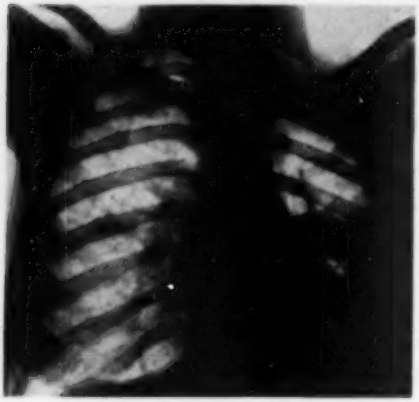


Fig. 14. Case V. Mrs. Margerine F. 6-21-'44.

The first-stage thoracoplasty and the extraperiosteal resection of the first three ribs resulted in very slight diminution in the size of the cavity in the left upper lobe. There is evidence of a "flaring up" of the tuberculous process in the left lower lobe.

On 6-1-'44 a first-stage thoracoplasty was done after due preparation of this patient by blood transfusions. Extraperiosteal resection of the first three ribs was accomplished. X-ray film of 6-21-'44 (Fig. 14) showed very small diminution in the size of the cavity as a result of the first-stage thoracoplasty.

The 2nd-stage thoracoplasty was not attempted until 7-20-'45. X-ray film taken 10-12-'45 (Fig. 15) shows the end results of the resection of the first seven ribs. The cavity in the left upper lobe is still patent but much reduced in size. The sputum has greatly diminished in amount, and the cough reduced in frequency as a result of this procedure. However, the patient at this stage weighed 91 pounds. In the contralateral lung there were hazy, irregularly outlined, small infiltrates near the hilum at the level of the 2nd and 3rd ribs anteriorly. These appeared to be active. However, at this time a gradual improvement began to take place in this case. She began to gain weight, and in a short space of time gained 21 pounds.

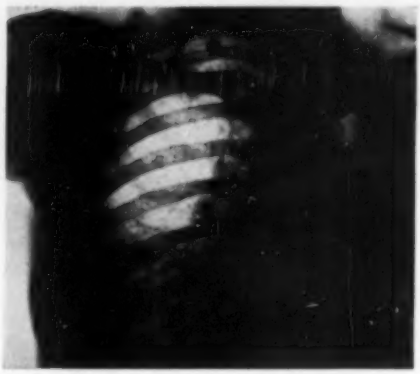


Fig. 15. Case V. Mrs. Margerine F. 10-12-'45.

A long period, a little over a year, intervened between the thoracoplasty stages. The precarious condition of the patient necessitated this delay. This film shows the end results of the 2nd-stage operation and the extraperiosteal resection of the 4th, 5th, 6th and 7th ribs, and revision of the previous operation. The cavity is much reduced in size. A small amount of fluid is visible in the cavity. The lower third of the left pulmonary field is blocked out by thickened pleura. Improvement in the patient's condition began at this time. Her weight was now 111 pounds, sputum less profuse and brought up with little difficulty.

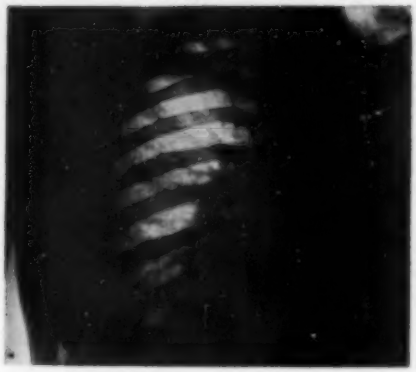


Fig. 16. Case V. Mrs. Margerine F. 1-17-'47.

The ballooning of the cavity under the regenerated ribs made further revision impractical. This x-ray film shows the end results following cavernostomy. The cavity in the left upper lobe was unroofed through an incision below and parallel to the left clavicle. The anterior segments of the regenerated 2nd and 3rd ribs were removed extraperiosteally. An incision was made through the pleura and the cavity entered with galvanocautery. A skin flap was attached to the superior cavity wall. A small fistulous tract resulted that can be plainly seen in this film. Sputum conversion took place. Drainage was not excessive. Her weight now was 114 pounds, appetite good, and morale excellent.

On October 22, 1945 a cavernostomy was done through an anterior incision at the level of the 2nd rib. With the unroofing of the cavity sputum conversion took place in about two weeks time. Various agents were then used to bring about cavity closure: sulfathiazole powder, penicillin, streptomycin and chloresium solution and ointment, and the application of silver nitrate to the cavity walls and the draining bronchus. This brought about a fistulous tract that occasionally closed for short periods of time only to reopen.

X-ray film taken 1-17-'47 (Fig. 16) shows a marked narrowing and contraction of the left pulmonary field, marked scoliosis to the left, and displacement of the heart and mediastinum to the affected side. The x-ray shows distinctly the opening of the fistula through the chest wall. However, we were now dealing with a markedly improved and revitalized patient. She was now ambulatory, eating well and gaining weight. Her weight at this time was 114 pounds. The drainage through the fistula was not excessive, and she was changing the dressings two or three times daily herself. Since the cavernostomy was done marked improvement has taken place in the lesion of the contralateral lung. All that remained of the previous infiltration on the right side were a few fibrous strands in the midlung field.

It was now felt that she could stand the final step in her goal to attain a cure by undergoing a total pneumonectomy on the left side, and this was done on 11-20-'47. The final x-ray film taken 4-7-'49 (Fig. 17) shows the narrowed thoracic cage on the left, the marked scoliosis, and the complete shifting of the heart and mediastinum to the left. There are some emphy-



Fig. 17. Case V. Mrs. Margerine F. 4-7-'49.

With improvement in her general physical condition, and evident stabilization of the lesion in the contralateral lung, it was felt that she could now stand resection of the left upper lobe. This was done 11-20-'47. Technical difficulties during the operation made it necessary to resort to total pneumonectomy. This film, taken in 1949, shows the blocking out, contraction and narrowing of the left hemithorax, marked scoliosis to the left, and the shifting of the heart and mediastinum into the left hemithorax. A moderate degree of emphysema is present in the right pulmonary field. She experiences occasionally slight dyspnea. Otherwise she is very comfortable and apparently in good health.

sematous changes in the right lung but not to an extreme degree.

A salient feature of this case is the refusal by the patient of any sanatorium care since her discharge from the institution in Maryland in April, 1944. Between the various surgical procedures that she has undergone she remained at home.

It was felt that a tension cavity of this type could not be closed by thoracoplasty. The various steps that were done, including the cavernostomy, were to condition the patient for the final step, which was total removal of the left lung.

She has resumed her literary career. Her feelings have been expressed felicitously in verse.

In subsequent articles we shall discuss Pulmonary Resection and its place in the control of Cavitary Tuberculosis.

CONCLUSION

1. Tuberculosis is in retreat. The national death rate in 1944 was 41.3 per 100,000 population. In 1947 it was 33.5 per 100,000 population. Paradoxical though it may seem, the greater the reduction in mortality the greater has been the clamor for more sanatorium beds. The argument that such a program would finally help in the eradication of tuberculosis does not seem to take into consideration the progress that we have made in the surgical treatment of pulmonary tuberculosis.

It takes a great deal of courage to raise a voice, questioning the need for more sanatorium beds, as Dr. Graham L. Davis has recently done in his letter to the American Medical Association. Commenting on the editorial in the *Journal* of August 20, 1949, entitled THE DEMAND FOR MORE BEDS FOR THE TUBERCULOUS, he says in part, "The cost of the additional beds needed now for tuberculous patients can be justified when they are added to regional general hospitals. Tuberculosis in many sections of the country is disappearing rather rapidly. The national decline in the death rate of eleven per cent last year, was an acceleration of the decline that has been going on for the past forty years. As the disease is discovered in its earlier stages it is becoming more and more a general hospital problem like any other acute illness. The beds, when they are constructed in general hospitals, can be used for other types of patients when tuberculosis disappears."

2. The mass chest surveys have revealed a greater number of incipient cases that are amenable to treatment by bed rest and streptomycin without resort to sojourn in a sanatorium.

3. The role of the family physician has become more important than ever in the care of this type of patient.

4. Though many factors and exigencies of city life make sanatorium sojourn a necessity in some instances, from the beginning to the end of the cure, many of the surgically treated cases refuse to return to the sanatoria on the completion of their stay in the thoracic surgery division of the general hospital. They argue, and with justice, that since they are no longer sputum-positive cases they could very well complete their cure at home.

5. The change in our selection of cases for thoracoplasty is discussed.
6. The role of antibiotics is emphasized.
7. The ever-increasing importance of the general hospital in tuberculosis control and treatment is pointed out.
8. The need for long periods of hospitalization for pulmonary tuberculosis, amenable to surgical measures, becomes less obvious when we take into consideration the recent advances in phthisiotherapy.

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Chronic Vasomotor Nasal Disorders and Their Therapy

(from an allergic viewpoint)

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The so-called perennial type of allergic rhinitis is a disease *sui generis* and has to be discussed separately, apart from hay-fever and other seasonal nasal attacks, although the theory of its genesis in many cases goes parallel with that of hay fever. Many names have been used for the perennial cases of vasomotor rhinitis, such as hyperesthetic rhinitis, chronic hypersensitive rhinitis, intrinsic allergy, perennial allergic coryza, intermittent neurotic catarrh, paroxysmal sneezing, coryza nervosa chronica, etc. The symptoms of this disease are the same as those we find in hay fever, only not seasonal-bound: Intermittent engorgement of the nasal mucosa, sneezing attacks, nasal obstruction, itching of the nasal mucous membrane, areas of irritation in the nose, conjunctivitis and increased mucus production. The objective features are the marked swelling of the turbinates, not only of the inferior turbinates but also of the higher turbinates and the ethmoid tissue, bulla ethmoidalis and uncinate process, and edema of the mucous membrane of the septum. The membranes mostly look pale, anemic, edematous, sometimes slightly cyanotic. The nasal smear often has a large number of eosinophiles, combined with blood-eosinophilia, and the histological picture of the affected mucous membrane shows cellular infiltration, plasma cells, polymorphonuclear leukocytes and edema of the tissue with eosinophilic leukocytes. The subepithelial tissue is affected too and proliferation combined with round-cell infiltration can be found. Hyperplasia and eosinophilia are the most characteristic features of allergic conditions.

What is the cause of the perennial disease of the nasal mucous membranes?

In many cases allergy may play a very important role, and the greater production of histamine or histamine-like substance accounts for the reaction of the sensitized tissue. Histamine was discovered by the two German chemists *Windhaus* and *Vogt* in 1909. Its known actions on human tissue are the following: 1) dilatation of capillaries, 2) increased permeability of the walls of the small vessels, 3) spasm of the smooth muscles and 4) stimulation of the glands. When the so-called allergic reaction occurs, more histamine or histamine-like substance is produced at the time when the allergens are striking at the human tissue amenable to shock: the sensitized cells with their reagin-content *(Doerr)*. The invading allergen combines with the reagin in the tissue (i.e.: the allergic reaction) and produces in consequence of this reaction a greater amount of histamine-like substance. *Dragstedt's* thesis is accepted by the great majority of research workers and seems to be proved by the effect of the modern antihistaminic therapy in these hypersensitive cases. He states that "allergy in man is based on an immunological mechanism basically identical with anaphylaxis in animals and superficially modified by human anatomical and physiological conditions." The mechanism of the release of histamine may be explained in the following way: In the allergic cells of the shock tissue reagins are present. These reagins combine with the intruding

allergen as one unit, and this unit produces the greater amount of the H-substance. The histamine-like substance is released by the sensitized cells and works on the receptors of neighbor-cells causing the allergic damage. The desensitization through antihistamines interferes with the union of the reagin and allergen, hindering the development of the allergic reaction and blocking the production of histamine.

But there are certainly cases of vasomotor perennial rhinitis which seem not to be the result of chronic histamine production. In some of these cases nerves play an important role, in others some endocrine imbalance, such as dysfunction of the thyroid gland and the gonads in association with menstruation, adolescence, etc. may be connected with the nasal attacks *(G. Laub)*. *Lederer* too states that there is reason to believe that the endocrine factor merits serious consideration, but he adds that more conclusive evidence is necessary before its rationale can be established. It cannot be doubted that definite relations between the different hormonal glands and the mucous membranes of the nose exist. Such connections were described many decades ago! *(Fliess, Hauk* and their coworkers). This knowledge led to the treatment of dysmenorrhea and headache of the menstrual and pre-menstrual periods by cauterization of nasal areas: (the middle turbinate and the tuberculum septi opposite this area). And we have to bear in mind that sometimes the cocainization of the sphenopalatine ganglion and phenolization of the sympathic are of very great value. And vice versa: The restoration of normal gland function may be of great influence in specific cases of vasomotor rhinitis due to an endocrine disturbance (testosterone propionate et alii).

In connection with this question something has to be mentioned concerning the headache combined with some cases of vasomotor rhinitis. These headaches may be consequences of histamine production and histamine desensitization shows good results *(Horton)*, but when the headaches are due to vasoconstriction, the action of the sympathic has to be eliminated which can be best done by the sympathicodiaphtheresis that I introduced many years ago with very good results in specific cases ("About a new method to influence so-called nasal headaches," *Monthly Journal of Otology*, 1932, p. 475). *Bayard Horton* frees his patients of pain by means of histamine desensitization, using histamine diphosphate injections for this purpose. *My* treatment of headache on a vasoconstriction basis consists of the phenolization of the sphenopalatine ganglion and blockade of the sympathetic nerve fibers with secondary vasodilation.

Before we continue with the discussion on the various forms of treatment in perennial vasomotor rhinitis one very important question has to be answered in short: What to do if allergic conditions are combined with anatomical changes in the nose?

My experience has taught me that it is better to do the absolutely necessary surgical work first and to introduce the anti-allergic or hormonal therapy later. If, for instance, a septal deviation is found or a large vomer-spur is present, or if posterior rhinoscopy shows large posterior tips, or the ethmoid labyrinth is very much involved, do not be concerned primarily with the anti-allergic treatment! First the anatomical lesion has to be repaired or eliminated before we do the medicamental therapy. Of course, the surgical indication must be absolutely clear. Under those conditions the right therapeutic way is established. Many prominent authors are of the same opinion and *Lederer* says: "When it is necessary to overcome mechanical obstruction which interferes with ventilation and drainage, surgery should be performed to relieve this particular condition. In any case, every effort should be made to bring about the nearest approach to normal ventilation and drainage of the nose and its accessory sinuses."

The following therapeutic procedures have been tried to combat perennial vasomotor rhinitis:

1.) If we assume that in many of these cases an allergic factor plays a main role, the object of our therapy would be to hinder the genesis of the allergic reaction

with the secondary greater release of histamine-like substance. Tests do not give too often decisive answers in perennial rhinorrhea. Occasionally housedust, danders, feathers, etc. are the provocative factors. Sometimes food allergy may be the cause of the reaction, but often the tests do not show any positive results and that is the reason why the specific desensitization (which we use in hay fever and similar cases with good results) cannot be used too often in perennial rhinorrhea. If the specific offenders are not known, other weapons have to be used for combating the molesting symptoms of this disease. The allergic reaction can be modified or destroyed by the following methods: a) If we put a patient with inhalation hypersensitiveness into the so-called allergen-free chamber, no allergen reaches the shock tissue and no reaction occurs. b) If the reagin content of the mucous membranes is diminished or destroyed, no reaction occurs either. Years ago I used trichloracetic acid on the nasal mucosa, *first* in seasonal allergic conditions. It helped. The intruding allergen could not find the cell-bound reagin and the reaction did not take place. No damage was done to the cells of the mucosa and the histology did not show any signs of destruction ("Cauterization of the nasal mucous membrane as therapy for hayfever," *Vienna Clinical Weekly*, 1931). c) The ionization of the nasal mucous membrane has been generally abandoned after the American and English literature advocacy of this treatment for a long time. I have found by long experience that zinc ionization of the shock tissue gives a very good result in hay fever and perennial rhinitis and for this purpose I use a practical device I introduced years ago. To get good results the following technic has to be used: After cocainization of the mucous membrane of the turbinate and the opposite area of the septum my nasal electrode is introduced, covered with gauze soaked in a 1% solution of zinc sulfate and further packing is carried out round the electrode which is then connected to the positive pole of the galvanic battery, whereas the cathode is applied to the arm. Then a current of 2 milliamperes is used for some minutes depending on the sensitivity of the mucous membranes and increased if the reaction is a slight one. The patient feels a slight tingling in his nose and a metallic taste in his mouth. These symptoms are proof of the good reaction of the nasal shock tissue. My results are so satisfactory that I am in favor of this treatment for cases of stubborn perennial nervous rhinitis. ("Successful treatment in nervous rhinorrhea by iontophoresis"—*Vienna Medical Weekly* No. 4, 1938). d) It cannot be doubted that unspecific desensitization is sometimes of great value. I have often used vaccination with *cutivaccin* which previously had been applied in cases of rheumatism. This remedy is a mixture of tuberculomucin, an extract of saprophytes and mitigated vaccine. It works well and without dangerous side-effects. In this treatment no antihistamine component is involved. The antibodies which act as the enemies of the invaders do the job. What substance plays the main role in this fight is unknown.

2.) Very interesting in the treatment of vasomotor rhinitis is the trial with snake venom *"Viperin"* which previously had been used in many cases of rheumatism and was introduced in the rhinological therapy by *Mechner*. We know that the hemotoxic venom releases histamine and it is possible that a slow histamine desensitization takes place when the Viperin ointment is used. We have seen some very good results in acute coryza and perennial forms of rhinitis too.

3.) The histamine treatment. This therapy has been advocated by some authors and has been rejected by others. *Horton*, as we mentioned before, saw good results in specific cases of histamine headache and *Farmer* in allergic rhinitis. I tried the direct application of histamine on the shock tissue itself by ionization, gradually increasing the applied amount. My idea was to use the histamine ion transfer directly on the shock tissue of the nose. Ion transfer is defined as the introduction of soluble salts into the tissues by means of a direct current. The histamine, being positively charged, is caused to move from the positive pole to the negative pole through the

intervening electrolyte, comprising the body fluids, under the influence of a constant potential *(Hummon)*. Some authors fear a more severe reaction and doubt the effectiveness of this treatment. So *Feinberg*, an expert in this field, states that injections of histamine in man do not increase his tolerance and whatever beneficial results are obtained, they must be explained on a basis other than desensitization to histamine.

4) Histaminase treatment. The use of an enzyme which destroys histamine in vitro was tried in allergic rhinitis but the results were doubtful too. After long years of trials—and sometimes good reports—the use of this enzyme has been abandoned.

5.) Hapamine—This is histamine linked to horseserum Globulin *(Fell)*. It was used with the idea that this conjugate might be more effective in the control of histamine, but only occasional benefits in allergic conditions have been found. *Farmer* reports that *Fell's* views have not been generally accepted and his histamine azoprotein (i.e., Hapamine) has not found favor with most allergists.

6.) Vasorin (i.e., histamine acid phosphate) perorally given, starting with one drop on an empty stomach, and then increasing, gives doubtful results. Much of the substance seems to get lost and only a small amount may be absorbed through the gastro-intestinal tract.

7.) The calcium treatment. Experiments have shown that calcium exerts an inhibitory effect upon exudation and inflammation and is a good remedy for diminishing the amount of tissue fluid and reducing edema. Calglucon and other forms of calcium may, therefore, relieve those cases of vasomotor rhinitis where rhinorrhea is a predominant element. It is of greater help if we combine this medication with viatmin C to raise the vitamin C level of the allergic patient. In cases of vitamin deficiency, as we find relatively often in hypersensitive patients, vitamin B is also used with good effect and, as mentioned before, testosterone and estrogen substances have to be added in cases with endocrine imbalance.

8.) Potassium Salts—Potassium Chloride (5 grains three times daily) works very well in certain cases of allergic rhinitis by reducing the swelling of the nasal membranes and counteracting the blockade of the nose. *(Bloom* and *Kibler* of Tucson).

9.) Atropine. For reduction of the production of the mucus in the nose, adrenalin as a counteracting factor to histamine and belladonna or barbiturates for diminishing the nervous irritability are good helps for symptomatic relief.

10.) The modern therapy brand "psychosomatic treatment" must not be forgotten and I have heard (I have not seen them) of patients who were cured of hay fever and rhinorrhea by psychotherapy. Certainly, environmental changes are sometimes of great help, avoiding contact with irritating substances or removal of household pets (and people sometimes too), in those cases where a nervous component has to be assumed.

11). The deep cauterization of the inferior turbinate in perennial rhinitis, where the mucous membrane shows a stage of great turgescence, is of great help. One has to cocainize the nose very well and after getting enough space between turbinate and septum, we introduce the red burning cautery and burn 2-3 postero-anterior lines into the mucous membranes. So we get fine scars, counteracting the turgor of the turbinates, producing better breathing space and reducing the watery secretion. At the same time the residual tissue is strengthened against allergic reaction. *Cyril Fox* uses bipolar electrodes in the form of needles. They are introduced in the substance of the turbinates and thus the tissue coagulates submucously. The effect of both methods is the same.

12.) Sclerosing agents are a good weapon against perennial rhinitis *(Thacker* and *Sam. Fox)*. Submucosal injections of sylnasol (sodium psylliate) is very good in cases of chronic vasomotor rhinitis which belong to the non-allergic and non-specific group, the so-called obstructive type, which shrinks well with astringents. We choose those cases where neosynephrin or a similar drug has a good effect and can restore the nasal airway temporarily. I have used

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EDITORIALS

The Homosexual Factor in Fifth Columns



The very high incidence of homosexuality, as revealed by Kinsey, impels one to wonder to what extent this sexual behavior pattern plays a part in some *otherwise inexplicable intimacies,* situations and events which have occurred and are occurring in high places.

It is this frequent accompaniment of communistic activity, along with "free love" and other dupe-alluring aberrations, which provides a key to an understanding, for example, of how it can happen that, as Senator Dulles puts it, "seemingly our ideals no longer inspire the loyal devotions needed for their defense."

The organization of fifth columns deliberately utilizes sexual services of one sort or another to absorb frustrated young people in search of an orientation in which they will feel accepted by and belonging to a social group. Homosexuality has a function here, along with conventional sexual relations. Since communism is itself basically antisocial it is bound to have antisocial relationships.

It is when homosexual lovers fall out that the motive of jealousy is most likely to go to destructive lengths by way of bitter personal reprisal. Then come weird revelations and the activation of investigative forces and protracted recriminations.

Meanwhile society has been grievously wounded and rats still continue to scurry about.

This sort of drama functions at times in both major and minor phases of life, always affecting social interests adversely.

Its recognition and liquidation takes precedence over the trailing of the communistic infection per se. We think it is the *primary* consideration *par excellence.*

Our failure to explore this motive when it affects events possessing tragic social implications is due to our cultural inhibitions where sexual problems, both general and particular, are concerned.

Simple Nutritional Truths

If people were well fed there would be far less need of hospitals. The number of hospitals in a country constitutes a rough index of the nutritional state of its citizens. Increasing the number of hospitals is the wrong way to deal with primary deficiencies; yet that is the inept way we pattern our policies.

But there is another angle to the nutrition problem that is of paramount importance. Communism holds no interest for peoples who are well fed. Those parts of the world which manifest unrest are centers of poor nutrition. Lord John Boyd Orr, the British food authority, puts the matter in a nutshell: "What is called communism in backward countries is hunger becoming articulate . . . You can't build world peace on empty stomachs."

Feed people properly and physical health and social contentment will prevail. Under such a planned policy trade would jump and new wealth be created. We who are so dedicated to free enterprise and the profit system should be crusaders for good nutrition. Doctors, of all people, understanding thoroughly the fundamentals involved, should be in the forefront as teachers and preachers of this gospel and shapers of action. It's definitely their provence.

Disaster, Incorporated

A letter from England in the New York *Herald Tribune* of January 27, 1950, details some of the devices whereby practitioners in that country defraud the Government of large sums, subsidizing patients for their connivance. "There has been a

steady decline in moral standards in every class."

The letter states that "The most tragic part of the effects of the health service . . . is avoidance of the medical profession by doctors' sons." At Cambridge University a group of twenty studying for the medical degree gave up when the health service became law.

Medical Economics points out that in this country the masses swallow the notion that the State has sources of income separate and apart from the 144,000,000 pocketbooks in the United States. "It is the greatest national delusion that we are suffering from at the present time and perhaps the most dangerous. And Europe's socialized countries think along the same lines, forgetting that Marshall Plan aid comes out of American taxpayers' pockets."

Something akin to what has happened in England could well happen here, under the strategy of cunning politicians.

We have seen how a bureaucratic administration of Indian affairs has resulted in disaster. If Indian affairs are too much for this small bureau to manage, what would happen in the case of an unwieldy health service?

To Be "Used"

The Federal Security Agency has issued a huge volume titled Health Service Areas —Estimates of Future Physician Requirements [in 1960]. It is a statistical forecast of expected resources ten years from now, that is, the number of physicians whose services might be "used" by that time.

The word "used" suggests a great deal to those intrigued by the present Administration's concern with the socialization of medicine.

The authors expect an increase to something like 143 physicians per 100,000 population for 1960, but they do not consider this adequate. They have figured to a nicety how many will be needed for certain purposes in the new set-up whose foundations are now being laid. If this is borne in mind much will be clear hereafter where the relations of the Government to our medical schools will be concerned.

NASAL DISORDERS

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sylnasol in many of those cases with very good results and agree with *S. Fox,* who stated that this method bids fair to assume an important role in the treatment of this form of rhinitis.

13.) Anthallan is sometimes of good help in cases of the chronic hypersensitive nose, intrinsic allergy, and non-seasonal hyperesthetic rhinitis. *Ghiselin* found that it works satisfactorily without any side-effects or untoward reactions.

14.) Allergostop *(Bogdan)* is a symptomatic agent used in asthma and vasomotor rhinitis. It contains belladonna, iodine, calcium lactate and precipitated sulfur.

15.) The diaphtheresis of the sphenopalatine ganglion (as mentioned above) is good for those cases of perennial rhinitis which are combined with severe headaches. This method has been introduced by me to eliminate specifically the sympathetic action. ("About a new method to relieve nasal headaches," *Monthly Magazine for Otology* No. 5, 1932, Vienna.)

16.) The antihistamine drugs are a very good symptomatic help in most cases of perennial rhinitis having an allergic base. Some of the authors believe that these drugs cause a block to histamine production in the receptors of the shock organ involved. The antihistaminic actions, reducing or eliminating the symptoms, are: Elimination of histamine and histamine-produced spasm, and reduction of the permeability of the endothelium and antagonism to vasodilatation. Although this is a great help for allergic attacks, we have to bear in mind that these drugs are only temporarily effective and, to combat the deeper cause, specific or unspecific de-

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CONTEMPORARY PROGRESS

MEDICINE

Aureomycin Treatment of Pneumococcic Pneumonia

T. M. Gocke and associates (*Archives of Internal Medicine*, 84: 857, Dec. 1949) report the treatment of 33 cases of pneumococcic pneumonia with aureomycin. In most cases aureomycin was given by mouth, the dosage varying from 1.0 Gm. every four to six hours to 0.5 Gm. every four, six or eight hours; in 9 of the 16 patients who were given individual doses of 1.0 Gm. at first, this dose was reduced to 0.5 Gm. after the temperature became normal and the patient's condition improved. Two patients died within eighteen hours after the first dose of aureomycin was given; the aureomycin was given intravenously and intramuscularly in one of these cases and intravenously in the other. Aureomycin was given intravenously in 4 other patients who recovered; the dosage was 500 mg. of crystalline aureomycin hydrochloride in 1.0 or 1.5 liters of isotonic sodium chloride or 5 per cent dextrose solution, given once daily by slow drip. In the 31 patients who recovered there was a marked drop in temperature within the first two days of aureomycin therapy, and the temperature became normal within this period in all but 8 cases. There was a parallel improvement in the acute symptoms. Definite and usually marked clearing of the pulmonary lesion was evident within six days after aureomycin treatment was started in more than two-thirds of the 31 patients who recovered; complete clearing was demonstrated roentgenologically by or before the end of the second week in all but 3 patients. One of the patients who died was in a critical condition when aureomycin therapy was begun, showing granulocytopenia and later agranulocytosis. In the other fatal case, the patient was showing favorable progress and the cause of death could not be determined as autopsy was not permitted. Oral administration of aureomycin resulted in nausea and vomiting in 6 cases, and the passage of large and bulky stools two to four times a day in 7 cases (including 5 in which there was some vomiting). There was no case of fever or rash, and no evidence of toxic effects on the blood, kidneys, liver or nervous system. While penicillin gives equally good results in pneumococcic pneumonia and has the advantages of generally lower toxicity and ease of administration, and, for the present, lower cost, aureomycin may prove of definite advantage in cases of pneumonia of mixed etiology, with the pneumococcus only one of the causative agents and in patients sensitive to penicillin, or if a strain of pneumococcus should prove to be relatively resistant to penicillin.

COMMENT

There seems to be much less pneumococcic pneumonia than in the past. Aureomycin will do all that penicillin does and much more. It is the drug of choice in most of the pneumonias. It can be given by mouth effectively and there is reason to believe that 250 mg. a day maintains a fairly satisfactory blood level. No doubt some pneumonias are taken care of with four capsules. It is a question if large doses are necessary in the average case. Of course, if the patient is seriously ill one should use the drug intravenously and in large doses by mouth. As a rule, however, sufficient amounts can be given without toxic reactions. Patients often say that the drug makes the bowels loose. ***M.W.T.***

Procaine Penicillin in the Treatment of Subacute Bacterial Endocarditis

E. H. Roston and G. H. Stollerman (*American Practitioner*, 4:102, Oct. 1949) report the use of procaine penicillin in the treatment of 6 cases of subacute bacterial endocarditis. In order to treat subacute bacterial endocarditis effectively with crystalline penicillin G, injections must be given every two or three hours for a period of four to eight weeks. Such frequent injections over a prolonged period cause the patient considerable discomfort and require much nursing time and effort. With procaine penicillin suspended in either oil or water, it was found in the cases reported that a single intramuscular injection of 300,000 units produced an average penicillin blood level of 0.6 Oxford unit after twelve hours and 0.2 unit after twenty-four hours. A single intramuscular injection of 600,000 units gave an

average penicillin blood level of 0.99 unit after twelve hours and 0.35 unit after twenty-four hours. In the 6 cases reported, the dosage employed was determined on the basis of penicillin sensitivity of the infecting organism *in vitro*. In the first 4 cases, doses of 450,000 to 600,000 units were given by intramuscular injection every twelve hours; and in the last 2 cases, in which the infecting organisms were highly sensitive to penicillin, a single injection of 600,000 units of procaine penicillin was given every twenty-four hours. Treatment was continued for six to eight weeks. Determinations of the penicillin blood level twelve or twenty-four hours after a single intramuscular injection showed that the dosage employed gave a satisfactory blood level in every case. The injections were well tolerated in every case and were less painful than with other forms of penicillin. All the patients responded satisfactorily to the treatment; the period of follow-up since treatment was stopped varies from three to eight months; all the patients were apparently cured with repeatedly negative blood cultures. It has been found by various investigators that if there is a relapse in sub-acute bacterial endocarditis folowing penicillin therapy, this usually occurs within thirty days. While this series of 6 cases would be too small for evalution of any new therapeutic agent, the authors consider that it is adequate to demonstrate the effectiveness of "this newer, more convenient and more economical method" of giving penicillin in sub-acute bacterial endocarditis.

COMMENT

This is encouraging and much easier on the patient. Single injections daily for six or eight weeks is quite an improvement over injections every two or three hours for four to eight weeks. ***M.W.T.***

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Victor Cox Pedersen ..... *Urology*
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Evaluation of Streptomycin Regimens in the Treatment of Tuberculosis

W. B. Tucker (*American Review of Tuberculosis*, 60:715, Dec. 1949) reports that between July 1946 and April 1949, a cooperative investigation of the effects of streptomycin therapy in tuberculosis was made by the Veterans Administration, the Army and the Navy; approximately 4,500 cases of tuberculosis were treated, including nearly 2,000 cases of pulmonary tuberculosis. Seven different regimens of streptomycin therapy have been studied. It was found that reducing the daily dosage of streptomycin from 2 Gm. to 1 Gm. and to 0.5 Gm. successively reduced the incidence of toxic manifestations; such toxic manifestations were also decreased by reducing the duration of treatment from one hundred and twenty days to sixty or forty-two days. A reduction of the number of injections into which the daily dosage was divided also decreased the incidence of toxic manifestations. Strains of tubercle bacilli that are resistant to 10γ per mi. or more of streptomycin "emerge" at a fairly regular rate, independently of the daily dosages employed in this study, but definitely related to the duration of treatment. The rates of "emergence" of such streptomycin-resistant strains can be reduced by giving streptomycin every third day, or by combining para-aminosalicylic acid (PAS) with streptomycin. In cases of pulmonary tuberculosis that were essentially homogeneous in relation to stage of disease, previous treatment and percentage of cavernous and predominantly exudative lesions, it was found that fever, when present at the beginning of treatment was reduced by streptomycin therapy in seven-eighths of the cases, temperature becoming normal in slightly over half; three-eighths

of the patients showed a weight gain of over 10 lbs. There was little variation in these results with the different regimens employed. Roentgenographic improvement of the pulmonary lesions was demonstrated in 82 per cent of patients treated with 2 Gm. daily for one-hundred and twenty days, varying with other regimens to 60 per cent with 0.5 Gm. daily for forty-two days. The duration of therapy was more important in this respect than the daily dosage. From these studies it is evident that the evaluation of streptomycin therapy in tuberculosis requires "careful balancing" of many different factors. No one "best" regimen of streptomycin therapy has yet been determined; 1 Gm. daily appears to be a satisfactory daily dosage. Because of the phenomenon of the development of streptomycin-resistance, the duration of therapy should probably not exceed forty-two to sixty days in most cases, until procedures for delaying the "emergence" of streptomycin-resistant strains of the tubercle bacilli have been standardized.

COMMENT

The combination of streptomycin and para-aminosalicylic acid offers new hope for tuberculosis. ***M.W.T.***

Clinical Studies on Thiomerin, a New Mercurial Diuretic

I. W. Winik and R. B. Benedict (*Journal of Laboratory and Clinical Medicine*, 34:1254, Sept. 1949) report a study of the new mercurial diuretic Thiomerin, the disodium salt of N (γ carboxymethyl mercaptomercuri β-methoxy) propyl camphoramic acid. Animal experiments reported by others have shown that Thiomerin is much less toxic to the heart than other commonly used mercurial diuretics. In 70 clinical trials of Thiomerin on 36 patients, the drug was found to have an effective diuretic action; this diuretic effect was usually evident within several hours after the injection and lasted twenty-four hours or more. In no case was there evidence of a nephrotoxic effect. In 29 comparative studies on 22 patients, the diuretic effect of 2 cc. of Thiomerin given by subcutaneous injection was equal to or greater than that obtained with intramuscular injection of equivalent amounts of Mercuzanthin or Salyrgan-Theophylline. In some cases the diuretic action of Thiomerin was more sustained. With Thiomerin no undesirable systemic effects were noted; urine examinations indicated that no kidney damage occurred. In 96.7 per cent of the subcutaneous injections of Thiomerin, there were no or only insignificant local reactions; in the other 3.3 per cent, the local reactions consisted of "annoying but seemingly harmless subcutaneous infiltrations of long duration."

COMMENT

Because subcutaneous injections are more likely to cause abscess formation than deep intramuscular injections, it may be wiser for the physician to use the deep injections. Thus the subcutaneous injections would be used when the patient gives the treatment to himself. ***M.W.T.***

Treatment of Heart and Kidney Disease and of Hypertensive and Arteriosclerotic Vascular Disease with Rice Diet

W. Kempner (*Annals of Internal Medicine*, 31:821, Nov. 1949) reports illustrative cases showing the favorable effect of the rice diet in relieving edema, ascites and retinopathy and in reducing enlargement of the heart in primary kidney disease. In hypertensive vascular disease without evidence of primary renal involvement, the use of the rice diet for four to 1,150 days (average ninety-two days) has had one or more of the following effects: reduction in the blood pressure, reduction in size of the heart, change in T in the electrocardiogram from completely inverted to upright, disappearance of retinopathy. Illustrative cases of various types of hypertensive vascular disease showing favorable response to the rice diet are reported. In his experience the author has found that not only is the rice diet an effective method of treatment in so-called benign hypertensive vascular disease, but that it can also change malignant hypertension into a benign type or cause it to disappear altogether. To be effective the rice diet must be employed under strictly controlled conditions and continuous supervision.

COMMENT

The rice diet is essentially for hypertension with cardiac and renal involvement. It is a question whether the effects of the treatment are due to salt restriction entirely or to a low caloric intake and low protein. It works well in many cases when the patient is under strict control. The rice diet should not be used for ordinary hypertensive states without complications. ***M.W.T.***

OBSTETRICS

Outlet Pelvimetry

Herbert Thoms and C. B. Cheney (*Surgery, Gynecology and Obstetrics*, 89:67, July 1949) report a study of symphysis-biparietal and sacral-biparietal diameters (pelvic outlet) in 145 women, all primiparas, in relationship to other pelvic measurements and the type of delivery. A method of measuring the symphysis-biparietal and sacral-biparietal diameters with a pelvimeter is described. This method is used to supplement a roentgen pelvimetric survey by the Thoms and Wilson technique. It was found that in the dolichopellic type of pelvis, i.e., with the transverse diameter of the inlet less than the anteriosposterior diameter, the symphysis-biparietal and sacral-biparietal diameters were relatively longer. In 43 pelves of this type in the series reported, the symphysis-biparietal diameter averaged 5 cm., the sacral-biparietal diameter averaged 8 cm. In pelves of the mesatipellic type, i.e., with the transverse diameter of the inlet greater than the anterioposterior diameter by more than 1 to 2 cm. of symphysis-biparietal and sacral-biparietal diameters were relatively short, averaging 4.5 cm. and 7.7 cm. respectively in 55 pelves. In the brachypellic type, i.e., with the transverse diameter of the inlet 3 cm. or more greater than the anteroposterior diameter, the symphysis-parietal and sacral-biparietal diameter was shorter than in the dolichopellic type of pelvis, averaging 4.9 and 7.6 cm. respectively. Operative delivery was necessary in 53.1 per cent of the women with a symphysis-biparietal diameter over 5 cm., but in only 38.9 per cent of those with a symphysis-biparietal diameter of 5 cm. or less. In order to evaluate pelvic capacity in relation to labor and delivery, it is necessary to study the pelvis as a whole—inlet, midplane and outlet measurements.

COMMENT

Obstetricians all over the world owe a debt of gratitude to Dr. Thoms for his work in x-ray pelvimetry. If the mothers knew of the technic we are sure they would also be grateful. In this particular article the authors present their results in a special study of outlet measurements. The importance of this study is conceded by every obstetrician who knows that in "order to evaluate pelvic capacity in relation to labor and delivery it is necessary to study the pelvis as a whole—inlet, midplane, and outlet measurements." Sometimes we forget this and get ourselves—and the patient—into "plenty" of trouble. Do careful pelvimetry to keep out of a "jam." ***H.B.M.***

Application of the Vaginal Smear to the Diagnosis of Pregnancy

R. G. Bonime (*American Journal of Obstetrics and Gynecology*, 58:524, Sept. 1949) reports a study of vaginal smears on normal menstrual cycles and in pregnancy with regard to the use of such smears in the early diagnosis of pregnancy. In the normal menstrual cycle, the peak of the function of the corpus luteum is usually passed by the tenth day after ovulation; during the period of active function of the corpus luteum, the functionalis cells increase rapidly in number in the vaginal smear, and appear as fresh, vital, well preserved cells; at about the twenty-fourth day as the corpus luteum function diminishes, these cells begin to show signs of deterioration and clumping. But in the event that conception takes place and progestational activity continues, the functionalis cells show no deterioration, retaining their "freshness," the clarity of the cell membranes and well-preserved nuclei; a further increase in their number may also be evident. Most of such "typical" pregnant smears may be observed soon after conception. A negative diagnosis of pregnancy may be made if the deterioration of the functionalis cells in the premenstrual smears is very evident. The corpus luteum of pregnancy remains active for one hundred and twenty days; the functionalis cells remain in vivo longer and show some thickening of their surface membranes; such cells have been described by others as pregnancy cells, and are found in the vaginal smears toward the end of the third trimester and later. Much additional study and observation are necessary to establish the value of the vaginal smear in the diagnosis of pregnancy.

COMMENT

The perennial quest for a test of early pregnancy continues unabated. Some are good; some, no good; and others fairly good. None are 100% accurate. "Time" is still the best "indicator of pregnancy." In this day and age, however, there seems to be no desire "to wait and see." The diagnosis of pregnancy must be made by the time the ovum becomes embedded. Why the rush? There are very few instances when the early diagnosis of pregnancy is imperative. We have never thought it was necessary to rush and hence have had no worth-while experience with any of these tests. The author admits that the vaginal smear diagnosis of pregnancy is not reliable as of today. Take your choice of the several good pregnancy tests if you must "keep up with the Joneses." ***H.B.M.***

X-Ray Visualization of the Placenta

C. S. Stevenson (*American Journal of Obstetrics and Gynecology*, 58:15, July 1949) describes a method for x-ray visualization of the placenta in the third trimester of pregnancy, which has been used in 488 cases. The technique differs from that usually employed for roentgenograms of the abdomen in that a slightly higher voltage and lower exposure time are used. The KVP is varied between 75 and 82, according to the degree of obesity, the MA is 100 and the exposure time between one and two seconds. The first film is taken with the patient lying on her side; if this does not show the placenta or shows only one edge of it, another film is made with the patient lying on her other side; occasionally the second film is taken with the patient lying on her back, if indicated by suggestive findings in the first film. To show the placenta satisfactorily an edgewise view of its central vertical axis should be secured as nearly as possible. In cases in which the placenta is not adequately demonstrated by this soft tissue method, cystographic studies are made. In the 488 cases studied, it was found impossible to visualize the placenta in 14 cases. In the 474 cases in which the placenta was visualized, the correct diagnosis of the presence or absence of placenta previa was made in 98.1 per cent of cases. There were 39 cases of placenta previa, which were correctly diagnosed except in 3 cases of marginal placenta previa. All cases of complete placenta previa (21) were correctly diagnosed. Cystography was not done in the 3 cases in which marginal placenta previa was not diagnosed; correct diagnosis was made in all cases in which cystography was done in addition to the soft tissue roentgenograms. In a recent "sampling series" of 56 cases of placenta previa studied by the x-ray techniques described, there has been no maternal mortality, and in 21 per cent of the cases of complete placenta previa, diagnosis was made and treatment instituted before vaginal bleeding had occurred.

Comment

Almost since the discovery of the x-ray by Roentgen in 1895, roentgenologists, working with obstetricians, have been striving to perfect a technic by which the placenta could be visualized by means of the x-ray. This has proven to be a tough problem but it is so important that the obstetricians, at least, keep prodding the roentgenologists to try again and again. The author has presented an excellent review, including the history, of x-ray visualization of the placenta. He has used the soft-tissue x-ray technic, and to some extent, cystograms in the diagnosis of placenta previa with a correct diagnosis in 95.3% of 488 cases. Taking only those cases where the placenta was visualized (474 cases) 98.1% were diagnosed. This is excellent and warrants repeating by every obstetrical clinic in the country. We have not had any worth-while experience in soft-tissue technic in identifying the placenta. We have had considerable experience with cystograms but are not very enthusiastic over our results. This method of x-ray visualization of the placenta is a forward step in the diagnosis of one of the "terrible complications" in obstetrics, viz.: placenta previa, a condition every physician doing obstetrics dreads to encounter. Well, we now have a way of making the diagnosis in 98% of cases. Let every physician who can utilize this method. The mortality, for both mother and baby, is far too high in placenta previa. We must do better. ***H.B.M.***

The Effect of Treatment with an Antihistaminic Drug on Blood Pressure and Urine in Pregnant Women

Dr. B. Hoffman (*American Journal of Obstetrics and Gynecology*, 58:385, Aug. 1949) reports the administration of antihistamine drugs to pregnant women who showed persistent albumin in the urine, a rise in blood pressure, or both. There were 13 patients who showed persistent albumin in the urine and did not respond to the usual therapy with salt restriction; these patients were given 50 mg. of Pyribenzamine three times daily, salt restriction being continued. In 10 cases the urine became free of albumin after one week of Pyribenzamine treatment; in one patient the albumin disappeared under treatment, but recurred after treatment was discontinued; in 2 patients the albumin persisted. There were 12 patients with hypertension without albumin in the urine who were treated with Pyribenzamine; 10 of these showed a substantial fall in blood pressure that was maintained until the time of delivery; 2 patients showed no definite improvement; one of these 2 patients had had hypertension in a previous pregnancy. But 3 of the 10 patients who responded well to Pyribenzamine therapy had also had hypertension in a previous pregnancy. Of 15 patients with both hypertension and albuminuria, 12 showed a definite drop in blood pressure, and in 11 of these the urine became free of albumin and the clinical condition showed definite improvement. Three showed no fall in

blood pressure and no diminution in albuminuria; one of these patients had a stillborn infant and another a premature infant that died in two days. This study indicates that an antihistamine drug is of some value in the treatment of hypertension and/or albuminuria in pregnancy; and that further study should be made of the use of such drugs in pregnancy.

COMMENT

Since the cause of the toxemia of pregnancy is still unknown any method of treatment must of necessity be empirical. So with an antihistamine drug. The author has reported his results in 40 cases with pyribenzamine. He states that this study indicates that an antihistamine drug is of some value in the treatment of hypertension and/or albuminuria in pregnancy. We have had no experience with the method. Read the article and try it out. ***H.B.M.***

Extraperitoneal Cesarean Section: A New Paravesical Approach

R. A. Cacciarelli (*American Journal of Surgery*, 78:371, Sept. 1949) describes a technique of extraperitoneal caesarean section. The bladder is exposed by a midline incision and the left rectus muscle is separated from its bed down to the pubic bone, with care not to retract it so far laterally as to injure the deep epigastric vessels on the left side. The space of Retzius is opened by blunt dissection, and the index finger is swept over the left anterior surface of the bladder to the left paravesical space. The fat area in this space is identified and this fat is swept aside with gauze in a sponge-stick holder until the left lateral umbilical ligament can be readily identified. Traction is made on this ligament medially and inferiorly until it and the posterior surface of the bladder are separated from the lower uterine segment; by inserting the fingers beneath the bladder as it is separating from the uterus, a sufficiently large space is obtained for delivery of the infant. A transverse crescentic incision, concavity downward, is then made in the lower uterine segment for two inches, rarely more. If the fascia over this incision is incised separately (which is not necessarily done), fascial flaps are produced; in this case, upper flap may be retracted upward to protect the tongue-like fold of peritoneum and the lower flap retracted downward to protect the bladder. A hand is inserted into the incision in the lower uterine segment, and this is gently dilated until the closed fist can be admitted and withdrawn with ease. The infant is delivered by version and breech extraction in vertex cases; the use of forceps is avoided as far as possible. If during version and breech extraction, the fetal abdomen faces the mother's head until the shoulders are delivered and then the fetus is rotated so that the back faces the maternal head, the after-coming head is delivered more easily. Following delivery oxytocics are given and the placenta removed. The uterine incision is closed with two layers of chromic No. 1, and a third layer of sutures is employed to imbriate the fascia of the uterine segment over the wound. Drainage is not employed. In 93 cases in which this method of cesarean section has been employed, there were no maternal deaths; there were no bladder injuries and the peritoneum was injured four times, including the one case in which forceps were required. All infants were born alive, but 5 died within three days; death was due to prematurity in 3 cases in which section was done for placenta previa; in one case death of the infant followed abruptio placenta at eight months; and in one, was due to congenital atelectasis.

COMMENT

Extraperitoneal caesarean section still has a place in the neglected obstetric case that requires section for delivery. There are those, however, who believe that with modern chemotherapy and the antibiotics low double-flap cesarean section is just as safe. We do not think that the extraperitoneal section operation should be performed "almost" routinely. We seldom do the operation, because we do not see the number of grossly neglected obstetric cases that turn up in some hospitals that do "a great number of extraperitoneals" during the year. We do the operation only on indications. Any physician who lets an obstetric case reach the stage where the extraperitoneal is indicated is not doing good obstetrics. Such a case should have been delivered by transperitoneal cesarean section—any low cervical type—when conditions would have been far better for the survival of both mother and infant. The author's type of extraperitoneal section seems about the same as other types usually employed and if you must do an extraperitoneal operation use it. Do good antepartum care; know your pelvis; watch the labor intelligently and you will not need to do an extraperitoneal cesarean section because you will perform the simpler low cervical type at a time that is far safer for both mother and baby. There is a "safer time" to perform section. Why not choose that time? ***H.B.M.***

GYNECOLOGY

Surgical Procedures Involved in the Treatment of Endometriosis

V. S. Counseller (*Surgery, Gynecology and Obstetrics*, 89:322, Sept. 1949) reports a series of 852 cases of endometriosis in which operation was done between 1940 and 1945. In this series only 6.2 per cent of the patients were under thirty years of age, while 81.7 per cent were between thirty and forty-nine years of age. This is indicative of a policy of avoiding operation on younger women if disability due to endometriosis is not incapacitating, as there is increasing evidence that operation on patients who have endometrial implants tends to produce secondary sterility. The indications for surgical operation in cases of endometriosis are menstrual pain or dysfunction, sterility associated with pathologic lesions of the pelvic organs or a combination of two or more of these factors. In some cases a radical operation, with removal of all pelvic organs is necessary because of the extent of the lesions. In other cases a conservative operation may be possible. In the series reported a radical operation was done in 742 cases, and a conservative operation designed to relieve pain and conserve menstrual and reproductive functions was done in 110 cases. In 10 cases a presacral neurectomy was also done, including 2 cases in which accessible implants were excised, 3 in which the adnexa on one side were removed, and 5 in which one ovary was removed. The results of presacral neurectomy were excellent in these cases, but this operation should not be employed unless the lesions are confined mainly to the uterus, the uterosacral ligaments and vesical tissues. Of the 737 married women in the author's series, 215 had never been pregnant; miscarriage had terminated pregnancy in 54 cases; 57 per cent had become infertile after two or more live births. In cases in which conservative operation is done, not more than 10 per cent later become pregnant. The author is of the opinion that it is better to delay operation in endometriosis as long as possible, unless there are associated lesions of the uterus and adnexa that are in themselves an indication for operative treatment. Conservative operations for the relief of dysmenorhea, menstrual disturbances and/or sterility should be undertaken only after careful consideration and a full discussion of the subject with the patient and her family. Radical operation is the most effective treatment and gives the highest percentage of cures.

COMMENT

Endometriosis occurring in younger women is always a knotty problem. Operation should be delayed as long as possible. When ovarian tissue is retained, endometriosis is apt to recur, since it is next to impossible to remove every endometrial implant. Nevertheless, in young women, particularly those desiring pregnancy, a conservative operation designed to relieve pain and conserve menstrual and reproductive functions should be performed. A certain number of such cases will require a second operation. Radical operation is curative and should be done in all cases if menstrual and childbearing function can be set aside. These are truly difficult cases to handle in the younger group of women. We have not performed presacral neurectomy for pain relief in endometriosis. The author reports that not more than 10% become pregnant after the conservative operation. This is an excellent showing for the conservative operation; but not so good for the 90% desiring motherhood, the cherished hope of every young woman. Remember! Delay the operation for endometriosis as long as possible.
H.B.M.

The Specific Treatment of Vaginal Mycosis

H. C. Hesseltine and E. S. Beckette (*American Journal of Obstetrics and Gynecology*, 58: 553, Sept. 1949) report the use of ricinoleic acid, 3 per cent, in a buffered acid jelly in the treatment of vaginal mycosis. One of the authors' patients in the Out-Patient Clinic had reported considerable relief of her vaginal mycosis following the use of a contraceptive jelly. Tests of the various ingredients of this jelly against monilia showed that ricinoleic acid was apparently a fungicide. The concentration of 3 per cent ricinoleic acid in the buffered acid jelly was well tolerated and was easily applied by means of a plastic syringe so that it can be used by the patient herself, for daily treatments at home. This treatment was employed in the treatment of vaginal mycosis in 68 pregnant women and 30 nonpregnant women, with cure in 74 per cent of the pregnant women (50 cases) and in 90 per cent of the non-pregnant women (27 cases). In most cases it gave prompt relief from the intense pruritus within seventy-two hours. There were no ill effects from the treatment even when employed for long periods. The authors are of the opinion

that 3 per cent ricinoleic acid could also be successfully employed in vaginal suppositories or other suitable vehicles.

COMMENT

The authors found that the use of 3% ricinoleic acid in buffered acid jelly was very efficacious in the treatment of vaginal mycosis. We have had no experience with the method but certainly there can be no contraindications to its use as recommended. On the evidence offered we certainly will use it on the next case of vaginal mycosis that comes our way. ***H.B.M.***

Furfuryl Trimethyl Ammonium Iodide (FTAI) for Postoperative Urinary Retention

M. A. Goldberger and associates (*American Journal of Obstetrics and Gynecology*, 58:376, Aug. 1949) report the use of furfuryl trimethyl ammonium iodide (FTAI), commercially known as Furmethide, in the treatment of urinary retention which so frequently complicates gynecological operations, both abdominal and vaginal. This drug is closely related to a large group of parasympathomimetic drugs. At first FTAI was given subcutaneously in a dosage of 2.5 to 5 mg. An intense desire to void urine was noted about five minutes after the injection, and micturition occurred within twenty minutes after the injection. Later the drug was given by mouth, in an initial dosage of 10 to 20 mg., then 10 mg. three times a day until spontaneous voiding of urine was satisfactorily established. The side effects of salivation and diaphoresis were absent or mild with oral administration. The satisfactory results obtained in relieving urinary retention by this method led to the use of FTAI earlier in the postoperative period, beginning the routine use of the drug in a dosage of 10 mg. three times a day as soon as fluids are tolerated, usually four to five hours after operation; if oral administration is contraindicated 2.5 to 5 mg. are given by subcutaneous injection. In 100 cases in which FTAI was given following a gynecological operation (59 abdominal and 41 vaginal operations), urinary retention was relieved in all but 2 cases. No serious toxic effects were noted in any case. The 2cases in which the treatment failed were complicated by severe urinary infection and mechanical trauma due to the use of indwelling catheters. The use of the drug is contraindicated in obstruction of the urethra or vesical neck and in severe urinary infection; in other cases it has been found of definite value in the prevention or relief of urinary retention following gynecological operations.

COMMENT

The female bladder is notoriously irritable. Long ago some wit said: "they retain or leak," which, in either case, is quite distressing to both patient and doctor." Postoperative urinary retention remains a major problem to the gynecological surgeon. There have been a multiplicity of modalities and therapeutic agents employed but bladder incontinence with painful distension continues to plague many patients and all surgeons. The authors, in 100 cases of urinary retention, used "Furmethide" which is furfuryl trimethyl ammonium iodide (FTAI) and obtained astonishingly good results. We have had some experience with this drug and like its action very much. However, several patients complained bitterly of salivation. There were no other serious toxic effects. Read this article. It contains reliable information. Your next case may be one of urinary retention. Be prepared! ***H.B.M.***

Effect of Sulfonamide Cream on the Bacterial Flora of the Infected Vagina and Cervix

George Blinick and associates (*American Journal of Obstetrics and Gynecology*, 58:176, July 1949) report a study of 45 patients with vaginal discharge, examination of which was negative for trichomonads, monilia and gonococci; in 43 patients there was cervical erosion of some degree. Specimens of vaginal and cervical secretions were obtained with sterile swabs and cultured. The microorganism most frequently recovered in these cases was *Staphylococcus albus* (42 cases); other organisms frequently found were gamma streptococcus, diphtheroids, colon bacilli, alpha streptococcus and beta streptococcus. A multiple sulfonamide cream was used in the treatment of these cases; 4 cc. of this cream was inserted into the vagina daily by the patient. In 10 cases cauterization of the cervix was done and the cream employed subsequently; all these patients were cured of the cervical erosion and discharge; with the use of the cream, the discharge and bleeding that usually follow cauterization were much diminished or entirely absent. In 15 patients, not treated by cauterization, the use of the sulfonamide cream resulted in complete or marked relief of the discharge; in the patients in this group who had cervical erosions, no significant effect on the erosions was noted. In 20 patients

there was no appreciable relief of symptoms and no change in the appearance of the cervical erosions. The use of the cream resulted in suppressing the coccal organisms in the vaginal and cervical secretions, but did not eradicate the diphtheroids and coliform organisms. No correlation can be drawn, at present, however, between the changes in the bacterial flora and the clinical results.

COMMENT

The sulfonamides have been used to sterilize or partially sterilize open wounds in various situations in the body. Therefore their use in the infected vagina and cervix seems logical. Indeed, we have had some experience with sulfathiazole and with good results, particularly following cauterization of the cervix. The authors prefer a multiple sulfonamide cream, 4 cc. inserted into the vagina daily by the patient herself. They made sure that there were no gonococci, trichomonads or monilia present before employing the treatment. Their results were very good in suppressing the coccal organisms in the vaginal and cervical secretions but apparently there was little or no effect on other forms of bacteria. ***H.B.M.***

Treatment of Functional Bleeding in the Last Decade of Reproductive Life

J. F. Foulkes (*Journal of Obstetrics and Gynaecology of the British Empire*, 56:176, Aug. 1949) reports a study of 169 patients between the ages of thirty-seven and fifty-four years, who had functional uterine bleeding. Curettage was done in all these patients, but 71 reported that the bleeding was not cured by this procedure. Of this group, 26 (36 per cent) had had at least one previous curettage without relief of symptoms. In the group of 63 patients reporting cure by curettage only 2 had had a previous curettage. Further analysis showed that the percentage of patients reporting a cure by curettage increased with the age of the patients. Irradiation therapy was given to 24 of the patients not cured by curettage; intrauterine radium was employed in 10 cases, with cure in all but one instance; and deep x-ray therapy in 14 cases with cure in all but 3 instances. In addition to this series, radiation therapy has been employed in other patients in the older age group, referred to the hospital for treatment of functional uterine bleeding, a total of 91 cases in all. In these cases climacteric symptoms and leukorrhea have been mild or absent; and in no case has carcinoma of the uterus developed. In 17 of the 71 patients not benefitted by curettage, and in 3 of the patients not benefitted by radiation therapy, hysterectomy was done. In the 14 cases in which radiation therapy was not tried, hysterectomy was done instead, either because the menstrual irregularity or excessive bleeding was getting rapidly worse, or because subsequent examination, often two or three years after the curettage, showed endocervicitis, vaginal prolapse, or some other condition that was an indication for radical surgery. Thirty-three patients, not relieved by curettage, preferred to wait for the natural cessation of menstruation at the menopause, rather than submit to further treatment. In this series, "no consistent results" were obtained with endocrine therapy.

COMMENT

One must be sure of the diagnosis of functional uterine bleeding at ages 40 to 50 years. Curettage with microscopic examination of the scrapings is the only sure way. Curettage as a therapeutic agent affords relief for a few months in some cases; in others it has little or no effect. After ruling out malignancy, prolapse, extensive lacerations, ovarian pathology and pelvic inflammatory disease, irradiation, perferably with intrauterine radium, is an excellent method in the management of excessive uterine bleeding in older women. On the other hand, strict adherence to the proper indications for irradiation places hysterectomy as the most common choice of treatment for this group of patients. Beware of the endocrines! Be sure of the diagnosis. ***H.B.M.***

NASAL DISORDERS

—Continued from page 144

sensitization has to be applied the same way as before. The use of these drugs should be tempered (as *Feinberg* advises), because a cure or lasting improvement is not to be anticipated as a result of the action of the remedies, and the toxic reaction and side-effects must not be overlooked. A great many antihistaminic drugs have been produced, to mention only some of them: Benadryl, Pyribenzamine, Hydrillin, Histadyl, Diatrin, Pyrolazote, Chlorothen, Chlorcylicine, Neohetramin, Thephorin,

—Concluded on page 156

Medical BOOK NEWS

Edited by
ANDREW M. BABEY, M.D.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn 16, N. Y. When books are sent to us with requests for review, selections for that purpose are promptly made.



Classical Quotations

● **Lacerations of the cervix are of frequent occurrence, and are seldom recognized, even at the time of labor. The tissues are then so soft that, unless the rent has passed beyond the cervix into the vaginal and connective tissues, it can scarcely be detected by a mere digital examination, and will escape observation unless an unusual amount of hemorrhage should exist as a consequence.**

THOMAS ADDIS EMMET

Laceration of the Cervix Uteri as a Frequent and Unrecognized Cause of Disease. *American Journal of Obstetrics*, 7-442, 1874.

Adrenal Glands

The Adrenal Gland. By Frank A. Hartman, Ph.D., & Katharine A. Brownell, Ph. D. Philadelphia, Lea & Febiger, [c. 1949]. 8vo. 581 pages, illustrated. Cloth, $12.00.

This book is a monograph on the adrenal gland dealing mainly with its anatomy, comparative anatomy, embryology, histology, chemistry, physiology and pharmacology. The clinical material is scant and adds nothing to the information that can be gleaned from any standard textbook of endocrinology or medicine. There is an extensive bibliography which occupies more than one-quarter of the text. The book is of value to workers in the basic sciences rather than to clinicians.

LEON M. LEVITT

Dictionaries

Blakiston's New Gould Medical Dictionary. A modern comprehensive dictionary of the terms used in all branches of medicine and allied sciences, including medical physics and chemistry, dentistry, pharmacy, nursing, veterinary medicine, zoology and botany, as well as medicolegal terms; with illustrations and tables. Editors, Harold Wellington Jones, M.D., Normand L. Hoerr, M.D., & Arthur Osol, Ph.D., with the cooperation of an editorial board and 80 contributors. Philadelphia, Blakiston Co., [c. 1949]. 8vo. 1,294 pages. Cloth, $8.50; thin paper, $10.75; deluxe, $13.50.

Blakiston's *New Gould Medical Dictionary* is a comprehensive dictionary with two hundred and fifty-two (252) illustrations on forty-five (45) plates. It is comprehensive in every sense of the word. It covers all branches of medical and allied Sciences, including Physics, Chemistry, Dentistry, Pharmacy, Nursing, Veterinary medicine, Zoology, and Botany as well as Medical-legal terms. Besides its Editors, it has an Editorial Board and eighty (80) contributors. Both Editors and Editorial Board are outstanding men in their professional lines.

JOHN J. HAUFF

Cardiology

An Introduction to Cardiology. By Geoffrey Bourne, M.D. Baltimore, Williams & Wilkins Co., [c. 1949]. 8vo. 264 pages, illustrated. Cloth, $5.00.

This brief textbook on heart disease is well written and presents fundamental information reliably and simply. Since it is a kind of "primer," much information is left out, but for students and general practitioners it should prove a handy, quick guide.

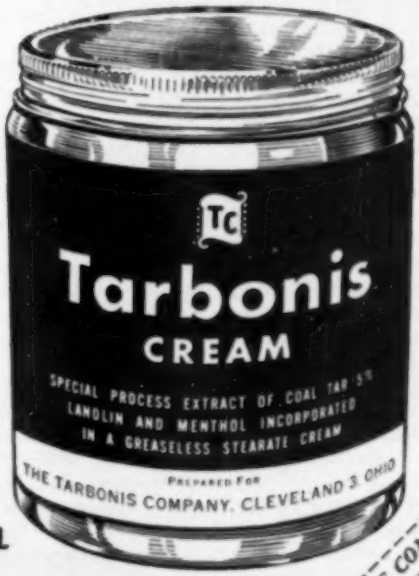
ANDREW BABEY

—Continued on page 156

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MEDICAL BOOK NEWS

—Continued from page 154

Virus

Textbook of Virology. For Students and Practitioners of Medicine. By A. J. Rhodes, M.D., & C. E. van Rooyen, M.D. New York, Thomas Nelson & Sons, [c. 1949]. 8vo. 312 pages, illustrated. Cloth, $5.00.

Virus infections are becoming more and more important. This little handy reference book can be recommended because it presents much useful information, succinctly, especially on diagnosis and treatment.

ANDREW BABEY

Surgery

Operations of General Surgery. By Thomas G. Orr, M.D. 2nd Edition. Philadelphia, W. B. Saunders Co., [c. 1949]. 4to. 890 pages, illustrated. Cloth, $13.50.

This book of 890 pages including the index of subjects, contains 21 chapters covering the wide field of general surgery, including the genitourinary and female reproductive systems. As the author states, this volume was written not only for the beginner in surgery but for the general surgeon as well. Additions or revisions have been made in every chapter of this second edition. Many new drawings have been added and those used in the former edition have been replaced with illustrations of more modern techniques. In the first two chapters the author stresses the importance of a knowledge of the fundamental principles involved in the healing and the surgical treatment of wounds. One chapter is devoted to a discussion of sutures and suture material. The remaining chapters deal for the most part with systems rather than with strictly anatomical divisions, or with such headings as plastic surgery, neurologic surgery, urology and gynecology. The technique of an operation is often preceded by a brief description of the anatomy involved. The indications for operation on particular organs have been summarized and attention is drawn to the dangers and safeguards concerning the most important operations. Abundant illustrations which show clearly the steps in an operation, have been employed, and the brief text complements the illustrations. Modern techniques for lobectomy have been described in the chapter on the thorax and respiratory system. The chapter on the circulatory system contains new techniques for blood vessel anastomosis, treatment of embolism, thrombophlebitis and phelbothrombosis. New techniques for exophagogastrostomy, total gastrectomy, pancreatico-duodenectomy, repair of strictures of the biliary ducts, colon resection and and prolapse of the rectum are described. The contributions of Blalock, Gross and others on the surgical treatment of anomalies of the aortic arch have been added. The work is beautifully and abundantly illustrated, mostly with illustrations and drawings taken from the publications of specialists in the surgery of the organs under consideration. The book is recommended not only for the beginner in surgery but for the general surgeon as well.

EMIL GOETSCH

✚

NASAL DISORDERS

—Concluded from page 153

Decapryn, Antistine, Neoantergan, Dramamine et al. . . . all are very good but the drowsiness and other side-effects are sometimes very annoying. Therefore: Caveant Consules!

I want to add that we saw good results too by applying antihistamine "dust" directly to the shock tissue of the nose, thus combining internal and external medication in stubborn cases.

Summarizing, we must say that many therapeutic measures are known which combat the perennial rhinitis, but not one of them is "omnipotent" and able to act in every case. We would be better off if there were remedies greater in effect than in number. "Multum, non multa!" would be the right slogan . . . But one must not be unthankful: Therapy brings so many possibilities, advices and devices that most of the cases show satisfactory results. And that is the desideratum in every therapy . . .

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Modern THERAPEUTICS

Use of Burow's Solution As a Wet Dressing

One of the most useful methods of application of therapeutic agents in dermatologic treatment is the wet dressing, according to Combes in the *N.Y. Phys. and Am. Med* (*33*:3 (Nov. 1949)). There is no contact dermatitis that does not derive some benefit from a bland wet dressing, the author continued. The wet dressing may be used to accomplish detergence, heat dispersion or heat retention. Four solutions were discussed for use in this connection. Solutions of sodium chloride between 0.9 and 1.5 per cent are ideal for wet dressings but they have the disadvantage that the concentration increases as the water evaporates from the dressing and then there is a decided tendency toward dehydration of the tissue. Boric acid solution from 1 to 3 per cent is sometimes used but there is the danger of boron poisoning on absorption when it is applied to extensive denuded areas. Burow's Solution N.F. VIII is an excellent medium for wet dressings but it is not very stable and is irritating and astringent if not properly diluted (1:20 to 1:30). To overcome these objections the author recommended Domeboro tablets which, when dissolved in water, make a solution equivalent to a 1:20 dilution of Burow's solution. This form makes available a fresh solution which is convenient for the patient.

Therapeutic Use of Vitamin E in Diabetes Mellitus

Thirty-five diabetics were given 112 to 337 I.U. a day of mixed tocopherols for 31 to 64 days followed by 100 to 900 I.U. a day of alpha tocopherol acetate for 14 to 146 days. Bensley *et al* reported in *Can. Med. Assoc. J.* (*61*:260 (Sept. 1949)) that the only effect from this therapy was a rise of the plasma level of vitamin E.

Garlic in Functional Gastrointestinal Disorders

Garlic has been used for centuries as a carminative. Little effort has been made, however, to substantiate its value by scientific experimentation. Damrau and Ferguson reported a study in *Rev. Gastroenterol.* (*16*:411 (May 1949)) in which before and after roentgenograms confirmed the clinical improvement of patients suffering from flatulence, belching, gas colic, and nausea after eating. The roentgenograms revealed that the dehydrated garlic has a sedative action on the stomach and intestines, it relaxes spasms, retards hyperperistalsis, and disperses accumulations of gas. Two tablets were given twice a day after lunch and dinner, each consisting of 4¾ gr. of dehydrated garlic. A series of 25 patients was observed in the study reported.

Aureomycin in Atypical Pneumonia

Aureomycin was administered orally to 32 infants with acute bronchiolitis and an equal number of alternately admitted patients with the same condition were treated with penicillin, streptomycin, sulfadiazine, or a combination of these agents. This latter group acted as controls for the aureomycin-treated group.

Thompson and Spector stated in *J. Pediat.* (*35*:546 (Nov. 1949)), that the aureomycin was given orally in a dosage of 50 mg. per Kg. of body weight per day. This dosage was later increased to 100 mg. The treatment was divided into doses every 4 hours for the first day and then every 6 hours. The only toxic manifestation was occasional nausea.

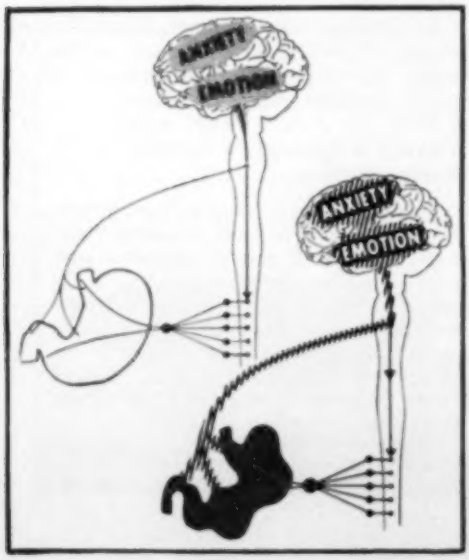
In comparison with the control group the aureomycin-treated group was hospitalized an average of 3 days less, their nose and throat cultures for pathogens was negative one day sooner, and 59.3 per cent were afebrile within 24 hours as compared with 43.7 per cent in the control group. The authors stated that in both groups there was usually a lag of several days between the disappearance of fever and the return of respiration to normal.

—Continued on page 58a

". . . about 50% of the patients who consult the general practitioner have complaints for which there is no discoverable physical or organic cause."[1]

Emotional response and adaptation to stress of the times play major roles in the increase of functional disorders. Exaggerated emotional response may produce somatic symptoms such as vague pains referred to various organs. Nausea, headache, cardiac and gastrointestinal distress are often presenting complaints. Diagnosis is usually easy in these cases because the number and variety of symptoms are not corroborated by physical findings. *Yet, these patients are seriously ill and merit attention and relief. Recent research has indicated that functional disturbances may develop into organic disease if long continued*[2]. In functional disorders, response to stress is effected via both branches of the autonomic nervous system. Therefore, treatment consists, where possible, in removal of the emotogenic factor (practical psychotherapy) and the "partial blockade" of the efferent autonomic pathways.

The family physician is well qualified to help these patients since he is most often aware of the environmental circumstances. His advice and guidance will do much to achieve the desired change in activities and habits and will help the patient to avoid "unhealthy situations".



Medical treatment is also essential in most cases. Controlled sedation of the entire autonomic nervous system accelerates recovery. This is accomplished by simultaneous administration of Bellafoline (cholinergic inhibitor), ergotamine tartrate (adrenergic inhibitor) and phenobarbital (central sedative).

Bellergal is a time tested preparation for administration in a wide variety of functional disorders. Bellergal inhibits the transmission of autonomic impulses without completely blocking organ function. This type of "mild sedation" will permit the patient to carry on daily activities while "taking stock of his difficulties". Karnosh and Zucker[3] state that, "Probably the best medication for all neurovegetative disorders is a combination of: (a) Bellafoline . . . (b) Ergotamine tartrate . . . (c) Phenobarbital . . . A good commercial preparation of these ingredients is a tablet called bellergal . . . The adult dose of bellergal is 3 or 4 tablets daily."

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arthritis therapy

With the growing concept of arthritis as a "systemic disease with joint manifestations,"[1] most clinicians today appreciate that constipation and common gastrointestinal dysfunctions are "not only susceptible of betterment but should be included in any wide-angled approach to the [arthritis] problem."[2] Which is why Occy-Crystine is more and more utilized for its dependable (yet non-irritant) cathartic and cholagogue action.

Composition: Occy-Crystine is a hypertonic solution of pH 8.4, made up of the following active ingredients — sodium thiosulfate and magnesium sulfate, to which the sulfates of potassium and calcium are added in small amounts, contributing to the maintenance of solubility.

References
1. American Committee for the Control of Rheumatism, Pemberton, R.: Rev. Gastroenterol., 9:91, 1942.
2. Spackman, E. W. et al: Am. J. M. Sci., 202:68, 1941.

OCCY-CRYSTINE LABORATORY • Salisbury, Connecticut

occy-crystine

the sulfur-bearing saline eliminant

—Continued from page 56a

Use of Sulfanilamide as a Prophylactic in Rheumatic Fever

Sulfanilamide was given to 211 children in the age range of 4 to 14 years for 565 person-years for the prophylactic control of recurrences of rheumatic fever. A second group of 337 children were observed as controls for a period of 971 person-years. The children in the treated group received 0.5 Gm. of sulfanilamide twice a day or if they weighed less than 42 pounds the dose was 0.25 Gm. Rubbo, Holmes and Stokes reported in *Lancet (257*:311 (Aug. 20, 1949)) that the recurrence rate among the treated children was 3.2 per cent as compared with 11.8 per cent among the controls. A study of throat swabs and the organisms recovered showed that of 1856 swabs made among the treated children 24.4 per cent were positive for the four groups of hemolytic streptococci as compared with 36.5 per cent positive among 2402 swabs made from the control group of children. There was a definite increase in resistant strains of the four groups of organisms studied. Twelve resistant strains were subcultured in broth for 5 weeks. There was no change in the resistance of the original and passaged cultures. Therefore, the authors concluded that resistant strains are permanent and will not disappear upon withdrawal of sulfonamide therapy. Toxic reactions were absent among the children with the exception of a few who developed mild rashes.

Vitamin K Therapy in Purpura Hemorrhagica

Cutaneous purpuric lesions were present in 5 of 6 infants at birth or shortly thereafter. Vitamin K was administered after birth in a dose of 4.8 to 9.6 mg. to the infants. The thrombocyte count ranged initially from 35,000 to 380,000 but rose in all cases after the administration of the vitamin K. The lesions and petechiae faded away in all cases and all of the infants lived. McAlenney and Kristan re-

—Continued on page 60a

EXTRA

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THE NEW EFFICIENCY FILE IS ALSO LOWER PRICED!

The Efficiency File not only has been greatly improved, but the price has been reduced! The top two drawers hold either 5" x 8" or 4" x 6" records. Each one has two compartments. Each compartment holds 2000 records. The big center drawer holds letter and legal size papers. The bottom compartment -- equipped with lock and key -- holds books, valuables, records.

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—Continued from page 58a

ported in *Am. J. Dis. Child.* (78:401 (Sept. 1949)) that 3 of the mothers received 4.8 mg. of vitamin K during labor and 3 received 2 mg. orally. One of the mothers had had purpura during pregnancy and 4 had past histories of the disease. The authors recommended that vitamin K be administered to children born of mothers with suggestive purpuric disease as a prophylactic measure.

Vitamin A Blood Levels In Advanced Age

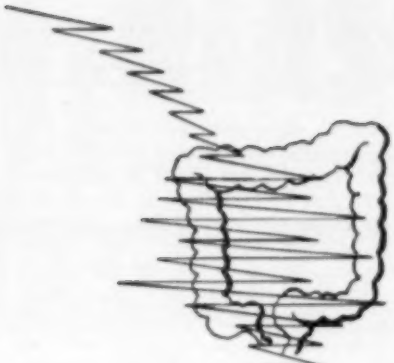
The effect of the oral administration of vitamin A on the plasma levels of vitamin A and carotene in 58 male subjects between the ages of 40 and 90 years was determined. Each subject was given 100,000 units of vitamin A in fish liver oil; the blood level of vitamin A and of carotene was determined before the ingestion and also at 2, 4, 6, 8, 10, 16, and 24 hours following the ingestion. All but two had an increase of 100 per cent in the vitamin A levels. Yiengst and Shock stated in the *J. Gerontol.* (4:205 (July 1949)) that age had no effect on the maximum serum levels of vitamin A obtained but the maximum levels were obtained slightly earlier in those between the ages of 40 and 70 years than in those above 70 years of age.

Therapeutic Use of Human Immune Globulin in Scarlet Fever

A series of 83 patients with scarlet fever were treated with 1 to 60 cc. of human immune globulin per pound of body weight. The globulin contained 40 neutralizing units per cc. Another group was treated with 9,000 to 18,000 units of scarlet fever antitoxin while a group of

—Continued on page 62a





more effective
less toxic
SPASMOLYSIS

Metanite provides all the peripheral autonomic efficacy of atropine, with none of the disturbing side effects.

It reduces muscle spasticity and checks mucous hypersecretion, without cerebral manifestations in the same degree. Moreover, its mydriatic effect is only 10% that of atropine . . . and it is 98% less toxic! Thus, it is safer in larger doses with relatively no toxic reaction.

That is why more physicians prescribe Metanite in routine antispasmodic therapy . . . pyloric stenosis pylorospasm, gastrospasm, intestinal colic . . . spastic and mucous colitis, ureteral colic . . . bronchial asthmatic spasm, cardiac syndromes due to increased vagal excitability . . . and in various gynecologic and urologic conditions.

Flexible selective dosage.

For Adults (Yellow tablets)—each containing 1/60 gr. atropine methyl nitrate.

For Children (White tablets)—each containing 1/120 gr. atropine methyl nitrate.

For Spasmolysis plus Sedation (Pink tablets) — each containing 1/60 gr. atropine methyl nitrate and ¼ gr. phenobarbital. (Warning: may be habit-forming.)

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in acute and chronic bronchitis and paroxysms of bronchial asthma . . . whooping cough, dry catarrhal coughs and smoker's cough . . .

PERTUSSIN

with no undesirable side effects for the patient helps nature relieve coughs when not due to organic disease.

Its active ingredient, Extract of Thyme (Taeschner Process), acts as an expectorant. It increases natural secretions to soothe dry, irritated membranes. It may be prescribed for children and adults alike. *Pleasant to take.*

Trial packages on request.

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—Continued from page 60a

50 patients were used as controls. The entire dose of the immune globulin and of the antitoxin was given at one time. According to Silver, writing in *Am. J. Dis. Child.* (78:437 (Sept. 1949)), the temperature of the patients was slightly lower by the second day in both of the treated groups and the rash disappeared more rapidly than it did in the control group. Complications, such as recurrence of fever, occurred in 43.3 per cent of the globulin-treated group, and in 32 per cent of the control group. Serum reactions occurred in 1.9 per cent of the group treated with globulin and in 5.5 percent of the group treated with antitoxin.

Influenza Immunization in Infants and Children

A single intracutaneous injection containing 0.1 cc. each of type A and type B influenzal vaccine was given to 49 children between 4 months and 13 years of age. Peterman and Kores stated in *Pediatrics* (4:337 (Sept. 1949)) that four weeks later immunity was demonstrated in all but 2 of the children. Most of the children had mild erythema near the injection site during the first 24 hours and about half the children under 5 years of age had a slight fever sometime during the first 24 hours. Nine children had a more severe fever reaction for as much as 2 days.

Phthalylsulfacetimide In Treatment for Cholera

Interest in the possible use of phthalylsulfacetimide in the treatment of cholera arose from the observations that the drug was very active against *Vibrio comma in vitro*. Seneca and Henderson also pointed out in the *Am. J. Trop. Med.* (29:425 (1949)) that this drug has the unique property of being absorbed by diffusion into the layers of the intestinal wall but of being unabsorbed into the blood stream.

—Continued on page 64a



RIASOL

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Actual photographs of patients before and after using **RIASOL** show what this effective prescription can do in psoriasis. In most cases clinical observations have shown the cutaneous patches fade away and gradually disappear, leaving a clear skin surface.

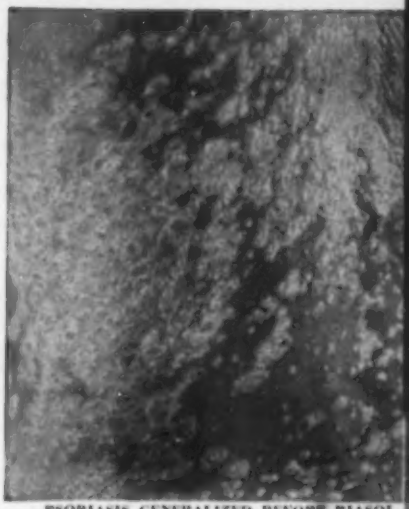
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RIASOL for PSORIASIS

—Continued from page 62a

Thus it would seem that the drug could be presented in high concentration at the locus of infection without reaching it by means of high systemic concentrations with a possible toxicity involved nor merely superficially washing by admixture with the bowel contents. The results of treatment in 40 cases of cholera with an initial dose of 5 Gm. and then 1 Gm. every 2 hours for 5 days bear out the vibrocidal activity *in vitro*. The cholera vibrios disappeared from the stools promptly and there was a gradual clinical improvement. Thirty-nine of the 40 patients treated survived. There was no evidence of toxicity of any kind attributable to the drug. The possibility of mass prophylaxis of a populace in the event of an epidemic of cholera was briefly discussed. It was suggested that if every member of the population received 0.2 Gm. per Kg. of body weight for 30 days the epidemic would be terminated.

Therapeutic Use of Vitamin A in Deafness

Three hundred subjects with progressive deafness of 2 to 25 years duration were treated with intramuscular injections of 50,000 units of vitamin A with terpins in olive oil. The injections were given twice a week for 6 weeks. If improvement was noted the treatment was continued for 20 to 22 weeks or until a maximum effect was obtained. After an interval of 3 months therapy was again resumed in many cases. Therapy was discontinued in 17 patients who did not respond after 5 to 6 weeks of therapy. In 26 patients treated for a period of 1 to 5 months there was an improvement of about 10 per cent in each ear. Among 24 patients treated for 7 months to 3 years there was an im-

—Continued on page 66a

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from distressing symptoms

Prompt and effective relief from distressing symptoms of urinary tract infections often can be achieved through the action of orally administered Pyridium.

The analgesic action of Pyridium is entirely local, reducing the urinary frequency and pain and burning on urination, without systemic sedation or narcotic action.

Pyridium is virtually nontoxic in therapeutic dosage and can be administered concomitantly with streptomycin, penicillin, the sulfonamides, or other specific therapy.

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—Continued from page 64a

provement of about 18 per cent. The most marked improvement occurred in the lower frequencies but an average of 10 to 40 decibel improvement took place in the conversational range. Improvement was most marked in deafness of catarrhal origin but minimal in deafness of nasal, nasopharyngeal and sinus origin. Conclusive results could not be obtained in otosclerosis. Tinnitus was improved in almost all cases, according to Lobel in *Eye, Ear, Nose, Throat Monthly* (*28*:213 (1949)), probably as a result of the antispasmodic and analgesic action of the terpins. The author suggested that the vitamin acts by reversing the degenerative changes in the auditory capsule, in Scarpa's and the spinal ganglion.

New Form of d-Tubocurarine Chloride

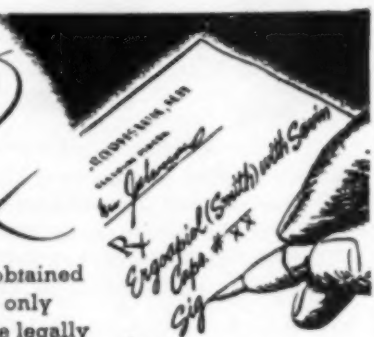
An essentially chemically pure form of d-tubocurarine chloride has been announced in a communication dated Nov. 15, 1949 from the Transandino Company, Palo Alto (Calif.). The purity of this form makes possible the adjustment of therapeutic formulations with previously unobtainable accuracy. Content can then be checked by physico-chemical means rather than bioassay methods. This new form of the drug also exhibits a higher margin of physiological safety than previous forms of tubocurarine.

Staphylococcal Infections in Children Treated with Aureomycin

Five infants with various staphylococcal infections had been treated with 180,000

—Continued on page 68a

Only on your Rx



When prescribing Ergoapiol (Smith) with Savin for your gynecologic patients, you have the assurance that it can be obtained only on a written prescription, since this is the only manner in which this ethical preparation can be legally dispensed by the pharmacist. The dispensing of this **uterine tonic,** time-tested ERGOAPIOL (Smith) WITH SAVIN—only on your prescription—serves the best interests of physician and patient.

INDICATIONS: Amenorrhea, Dysmenorrhea, Menorrhagia, Metrorrhagia, and to aid involution of the postpartum uterus.

GENERAL DOSAGE: One to two capsules, three to four times daily—as indications warrant.

In ethical packages of 20 capsules each, bearing no directions.

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Each 'Benzebar' tablet contains: 'Benzedrine' Sulfate, N.N.R. (racemic amphetamine sulfate, S.K.F.), 5 mg.; phenobarbital, ¼ gr.

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Benzebar for the depressed and nervous patient

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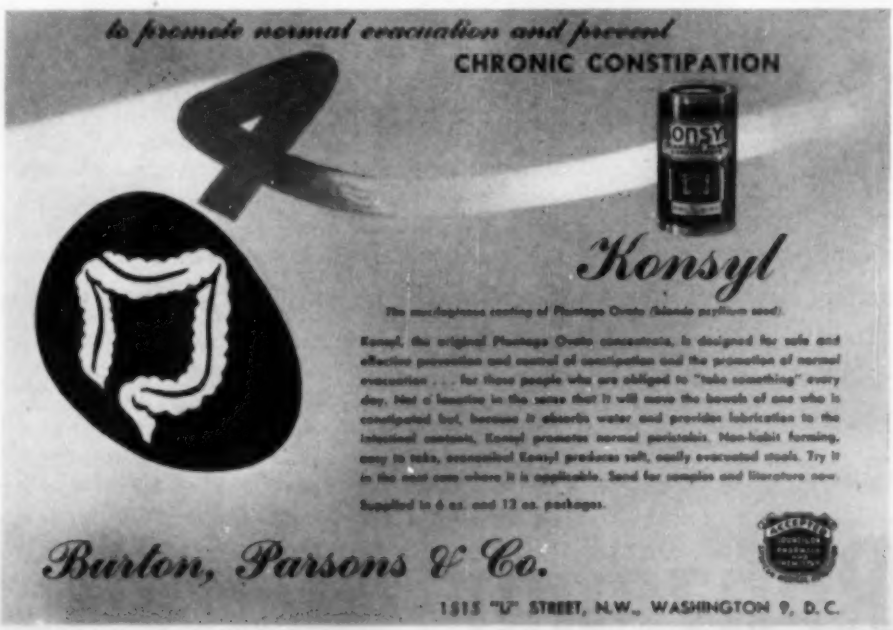
—Continued from page 66a

to 1,600,000 units of penicillin and 0.4 to 0.98 Gm. of sulfadiazine over a 3 to 10 day period without benefit. In each case there was marked improvement within 48 hours following treatment with aureomycin. Chandler, Schoenbach, and Bryer reported in *Pediat* (*4*:149 (Aug. 1949)) that the dosage employed was 20 Gm. every 4 hours in 4 cases and 50 mg. every 4 hours plus 20 mg. intramuscularly each day for 39 days in one infant with pneumonia and unilateral atelectasis. Complete recovery occurred in each case. A sixth infant critically ill with staphylococcic septicemia did not respond to as much as 2,000,000 units of penicillin, 2 to 3 Gm. of sulfadiazine, and 200 to 1600 mg. of streptomycin a day for 13 days. Treatment with aureomycin resulted in negative blood cultures after 5 days of therapy with 160 mg. of aureomycin intramuscularly plus 100 to 600 mg. by stomach tube daily for 8 days and then 300 mg. a day intramuscularly for 9 days. The only side effects were mild vomiting in 1 infant for 1 day and slight diarrhea in one other infant for 1 or 2 days.

Treatment for Superficial Mycoses

The use of salicylanilide in the treatment of superficial mycoses was discussed by Schwartz, Robinson and Gant in *Industrial Med.* (*18*:257 (June 1949)). In 50 successive cases of superficial fungus infections a solution containing salicylanilide 5 per cent, trimethyl octadecyl ammonium pentachlorophenate (Hyamine 3258) 1 per cent, and isopropyl alcohol 94 per cent was applied and allowed to dry. There was an immediate relief or marked lessening of the pruritis. Since one of the predisposing causes of many mycoses is moisture the alcohol was chosen as the vehicle because

—Continued on page 70a





Lady out of the Dark

The selective cerebral action of Norodin is useful in dispelling the shadows of mild mental depression. The reported advantages of Norodin over chemically related analeptics include smaller dosages, more prompt and prolonged mental stimulation, and relatively few side effects. Norodin can be used to advantage in achieving the sense of well-being essential to effective patient management in functional and organic disturbances. In obesity, Norodin is useful in reducing the desire for food and counteracting the low spirits associated with the rigors of an enforced diet.

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MODERN THERAPEUTICS

—Continued from page 68a

it has a dehydrating action as well as being antiseptic. Previous experiments using Carbowax 1500 gave good results, much better than any previous results with grease-type bases, but since Carbowax has no dehydrating action the solution in alcohol was deemed more desirable. Salicylanilide is a non-toxic fungicide first used in mildew-proofing. Hyamine is a quartenary ammonium compound having fungicidal, antiseptic, wetting and penetrating properties. Of the 50 cases treated 43 were clinically cured and 7 were improved. Of 38 cases of tinea pedis 36 were cured in an average of less than 3 weeks.

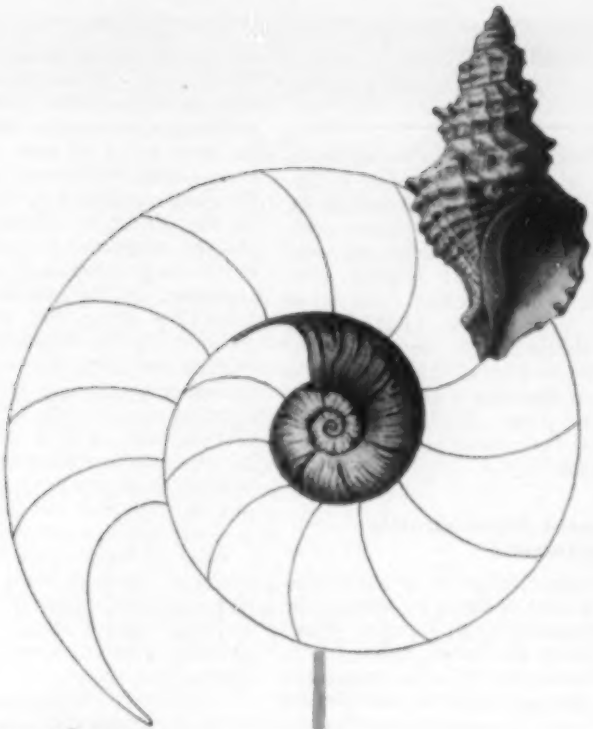
Bacteriostatic Action of Penicillin

The bacteriostatic effect of penicillin upon a number of organisms was not immediately abolished by the removal of the penicillin from the medium, according to Eagle and Musselman in *J. Bact.* (*58*:475 (Oct. 1949)). As an illustration, the exposure of beta-hemolytic streptococcus group B to 256 micrograms of penicillin per cc. of medium required between 17 and 23 hours to kill 99.9 per cent of the organisms. After 1½ hours exposure the addition of penicillinase to the medium did not produce immediate growth but the remaining viable organisms were impeded for the following 1½ hours and complete recovery with normal growth and multiplication did not occur for a minimum of 6 hours. Longer periods of exposure required longer periods for the remaining bacteria to recover normal activity. There was no apparent correlation between the penicillin sensitivity of the organisms and the rate of manifestation of toxic effects or the length of the recovery period.

Milibis Effective in Control of Amebic Dysentery

The preparation Milibis, known chemically as bismuth glycoyl-arsanilate, has

—Continued on page 72a



Protection...

Just as the shell of the nautilus protects it against environmental injury, so does

Gelusil* a combination of an especially prepared, nonreactive aluminum hydroxide gel and magnesium trisilicate, protect the inflamed or ulcerated areas of the gastric mucosa against injury by the acid gastric juice. Gelusil* is a pleasant-tasting preparation . . . an effective antacid adsorbent.

Gelusil* provides rapid and sustained relief of gastric hyperacidity and is particularly effective as an adjuvant in the medical management of gastric or duodenal ulcer.

Gelusil* is available as a pleasant-tasting liquid or tablet.

Liquid—bottles of 6 and 12 fluidounces.

Tablets—individually wrapped in cellophane—boxes of 50 and 100 tablets. Also bottles of 1,000.

William R. Warner & Co., Inc.

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Gelusil* "Warner"

liquid and tablets



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—Continued from page 70a

given excellent results in studies involving 1,186 cases of amebiasis according to Dr. J. B. Rice, director of medical research of Winthrop-Stearns, Inc. in a recent communication. Amebic dysentery was once considered to be only a tropical affliction but it is now known that it is world wide in prevalence. In the United States the disease is most prevalent in the West and South Central States. A course of therapy of the drug is usually 2 tablets (0.25 Gm.) 3 times a day for 7 days. The cure rate has been stated as being as high as 90 per cent.

Subcutaneous Administration of Mercaptomerin

The intramuscular route of administration of mercurial diuretics has become the route of choice because it is safer. However, the results are not as predictable by this route as compared with the intravenous route and the mercurials are very painful and produce sloughs unless injected deeply. The mercurial diuretic mercaptomerin sodium (disodium N (gamma-carboxy-methyl-mercaptomercuri-beta-methoxy)) has been found to have only 1/160 the acute cardiac toxicity of mercurophylline. This new compound is relatively painless for the patient on subcutaneous injection and the occurrence of nodular formation at the site of injection is rare. Batterman, Unterman, and DeGraff stated in *J.A.M.A.* (*140*:1268 (Aug. 20, 1949)) that the predictability of obtaining a satisfactory diuresis with mercaptomerin intravenously or subcutaneously and of mercurophylline injection intravenously were, for all practical purposes, identical. Urinalysis following the administration of mercaptomerin revealed no abnormality. Systemic reactions such as chills and vomiting occurred only in a very small percentage of the cases. In a study of local tolerance the mercurial compared favorably with 1 cc. injections of physiological saline. The normal dosage employed ranged from 1 to 4 cc. subcutaneously for therapeutic diuresis in congestive heart failure.

—Continued on page 74a



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*Choline Dihydrogen Citrate (Choline . . . 1 Gm.)**	*2.5 Gm.*
dl-Methionine	*1.0 Gm.*
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Liver Fractions from	*36.0 Gm. liver*
**present in syrup as 1.15 Gm. choline chloride*	

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—Continued from page 72a

Water Soluble Suppository Base

A water soluble suppository base of French origin for use as a vehicle for penicillin and sulfathiazole was described by Gillham and Tomlinson in *Pharm. J.* (*162*:472 (June 25, 1949)). The base was primarily composed of polymers of ethylene oxide (polyethylene glycols) known as Carbowaxes. As is known, these compounds are waxes which are solid at normal temperatures when the molecular weight of the polymer is above 1000. They are soluble in water, are chemically stable and physiologically inert. Lubrication of the mold is not necessary. Solidification is sufficiently rapid to prevent separation of the ingredients during cooling.

The suppositories may be made to dissolve more rapidly by adding up to 10 per cent of water to the base. Softer suppositories may be obtained by using about 10 per cent of water and an equal amount of glycerin. The particular formula developed by the authors was:

Calcium penicillin	300,000 units
Sulfathiazole	15 Gm.
Carbowax 1500	90 Gm.
Carbowax 6000	180 Gm.
Solution of chlorocresol	30 cc.

The Carbowaxes were melted on a water bath and the sulfathiazole dissolved in this mixture. The calcium penicillin was dissolved in the solution of chlorocresol and after the waxes had cooled but before they solidified the penicillin solution was added with stirring. The suppository molds were then filled. When tested for solubility it was found that a suppository left undisturbed in a beaker of water at 37°C. for a period of 2 hours was completely dissolved.

A suggestion also was made that a mixture of the polyethylene glycols and a little syrup will make a good pill excipient which will cause the pills to retain their shape indefinitely and to remain soluble even after prolonged storage.

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Dosage and Method of Use:—At the first sign of a cold—running nose, dry scratchy throat or sneezing, administerimmediately one RESISTAB. Follow with another RESISTAB immediately before each meal and one at bedtime for a total of four tablets daily. Continue this therapy up to three or four days.

Patients should be advised not to exceed recommended dosage. If any drowsiness follows the use of this product, patients should be advised not to drive, or to operate machinery.

Each RESISTAB contains 25 mg. thonzylamine. At pharmacies in folders of 12 and bottles of 36 tablets.



1. The Prophylaxis and Treatment of the Common Cold with Neohetramine (thonzylamine hydrochloride). Ind. Med. 18:508 (Dec.) 1949.

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News and Notes

Gastroenterological Conferences

Weekly gastroenterological conferences at Bellevue Hospital, New York City, are held every Monday at 3:30 p.m., precisely, in the G 6 theatre (F and G Building) under the supervision of Jacob Buckstein, M.D.

These conferences consist of a presentation of the clinical, radiographic and operative or autopsy findings of current gastroenterological cases.

The medical profession is cordially invited to attend.

Dr. Braley Heads New Eye Care Department at New York University

The appointment of Dr. Alson E. Braley as Professor and Chairman of the Department of Ophthalmology, Post-Graduate Medical School, a unit of the New York University-Bellevue Medical Center, was announced today by Dr. Robert Boggs, Dean of the School.

Dr. Braley, since 1941 an Assistant Professor of Ophthalmology at the College of Physicians and Surgeons, Columbia University, will be in charge of all ophthalmological research, teaching and patient care at the Medical Center, Dr. Boggs said. The new post he occupies was created by the consolidation of New York Post-Graduate Medical School and the Postgraduate Division of New York University College of Medicine, united during the last academic year to form the Medical Center's new Post-Graduate Medical School.

Under Dr. Braley's direction, the care of patients with eye diseases, teaching of ophthalmology to physicians on a post-graduate level and various research projects will be carried out on the Eye Service, Bellevue Hospital. Dr. Daniel B. Kirby, formerly professor and chairman of the Department of Ophthalmology, remains on the faculty as Professor of Ophthalmology and an active participant in clinical teaching.

Cancer Diagnostic Teaching Clinic

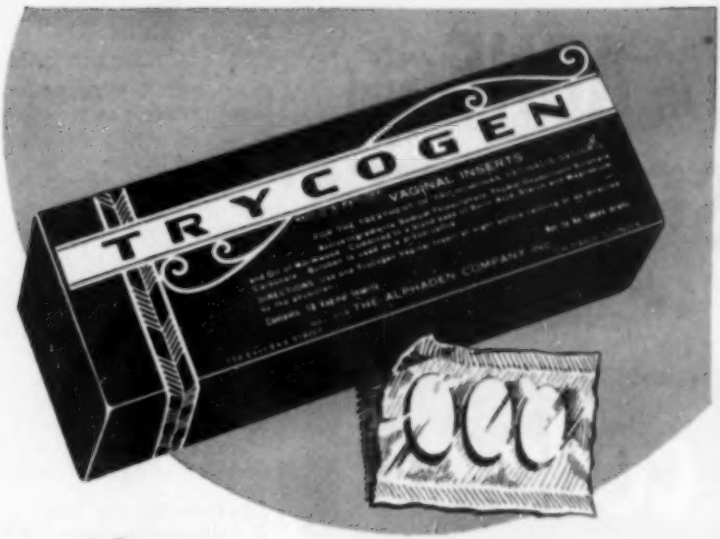
Establishment of a cancer diagnostic teaching clinic devoted to the instruction of medical graduates in the skills and arts necessary for diagnosing cancer was approved today by the Detroit Board of Education as a cooperative program of the American Cancer Society, the Detroit Institute of Cancer Research and the Wayne University College of Medicine.

Dr. Gordon H. Scott, acting dean of the college of medicine, stated that the college would undertake to staff and operate a teaching program in the Cancer Center Building at John R. and Hancock. The project will entail no additional expense for the University since it can be managed with funds now available to the medical school through grants-in-aid for cancer teaching and other funds to be supplied by the American Cancer Society. Some personnel help will also be underwritten by the Veterans Administration Hospital at Dearborn.

William S. Murray, executive director of the American Cancer Society, Southeastern Michigan Division, said in proposing the program, "It is our common belief that every physician's office should be a cancer diagnostic center. It is our hope that the University will contribute faculty personnel and make it possible for medical graduates to enrol in definite courses of instruction in cancer to be conducted at the Cancer Center Building, Detroit Receiving Hospital and the Veterans Administration Hospital, Dearborn. We hope that Wayne will coordinate these activities to the end that each student so enrolled may receive the well-rounded instruction and experience so necessary for sound practice in this field."

Dr. Scott further commented, "It is our firm conviction that every physician should be trained specifically for the recognition of cancer. We propose to make it possible for about fifty physicians a year to receive this special kind of training under our direction. It is our belief that this can best be done by using as one limb of our instructional program a 'well-patient'

—Continued on page 78a



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*Combes, F. C., N. Y. State Jour. Med., Feb. 15, 1946.

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—Continued from page 76a

group, such as might be furnished through the American Cancer Society. We propose to employ those facilities for detection which are readily available to practicing physicians and familiarize them thereby with the techniques and procedures. The facilities of the tumor clinic at the Receiving Hospital are to be drawn into this instructional program as in the Tumor Board of the Veterans Administration Hospital at Dearborn. By the use, therefore, of the 'well-patient' clinic at the Cancer Center, the Tumor Clinic of Receiving Hospital, and the Veterans Administration facilities, we will be able to provide a well rounded educational program for the physicians who wish to take advantage of it."

Doctors Report Successful Treatment for Mental Depression

Shock treatment and psychotherapy for mental depression have resulted in complete recovery of 95 per cent of a group of patients, two Chicago doctors report.

Both electric shock and insulin shock treatments were used, Drs. Theodore T. Stone and B. Cullen Burris of Northwestern University Medical School and Wesley Memorial Hospital say in a recent issue of the Journal of the American Medical Association.

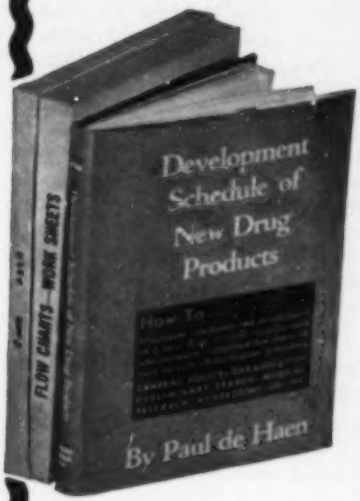
Sleeplessness, loss of appetite, loss of weight and nervousness are indicative of the condition, especially when these symptoms occur in a woman in her 40's or early 50's, according to the doctors.

Each patient had daily sessions with the doctors in an attempt to determine causative factors or other problems requiring analysis and explanation.

"Fears and doubts were explained and peculiar and inaccurate thoughts were rationalized and cleared whenever possible," the doctors say.

Most of the 50 patients in the group were women, and all had been treated previously for sugar diabetes, high blood pressure, hardening of the arteries, fatigue, chronic gallbladder disease, stomach ulcers, anemia, undulant fever or other conditions.

—Continued on page 80a



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—Continued from page 78a

A number of the patients recovered completely after a month of shock treatment, the article says. In a few cases, two to four years were required for recovery.

Warn Against Improper Use of Thyroid Extract for Reducing

Thyroid extract is a potent medicament which is dangerous if improperly used, warns an editorial in a recent issue of the Journal of the American Medical Association.

Excessive doses of thyroid extract may cause nervousness, insomnia, loss of weight, heart disturbances, damage to the liver and even protruding eyeballs, the editorial points out.

"Unfortunately, some of the laity, particularly obese women, have learned that the drug can cause a reduction in weight," the editorial says. "Some of these women were treated originally with proper doses by physicians but have increased their daily intake without their physicians knowledge and consent.

"Others have heard of the weight-reducing property of the medicine and have purchased it without a doctor's advice either as thyroid or concealed under some fancy name in patent medicine.

"None of the persons who resort to self medication realize that the reduction in weight is due to disturbances in metabolism and is not a directly selective action.

"There are several procedures that would aid in correcting the over-use of thyroid extract: Laws in all states prohibiting the sale of this medicament except on a physician's prescription; general recognition that thyroid treatment should be begun with minimal doses, as thyroid acts slowly and cumulatively, and education of the public against the dangers of this potent substance.

Treat Blood Clot in Brain by Blocking Nerve Pathway

Doctors have devised a promising treatment for a clot in a blood vessel of the brain, according to a report in a recent issue of the Journal of the American Medical Association.

Until recently treatment of the condition, acute cerebral thrombosis and embolism, was confined to general measures such as administering intravenous fluid or giving whisky.

The new technique, known as stellate ganglion block, is reported by Drs. Edwin W. Amyes and Seymour M. Perry of the College Medical Evangelists and University of Southern California School of Medicine, Los Angeles.

It involves blocking certain nerve pathways to vessels which supply the brain. This is done by injecting procaine hydrochloride, a pain-killing drug, in nerve pathways at the back of the neck. The procedure tends to increase the blood supply to the part of the brain that has been affected by the clot.



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Of the 44 patients treated, 28 showed improvement in 15 minutes to an hour after the first injection was given. The doctors noted increased alertness, greater ability to move, improved speech and better comprehension.

Improvement occurred in nine of 10 cases who received the treatment in the first six hours after the onset of symptoms, the doctors say.

Doctors Told to Watch for Spread of New Disease

During the warm seasons, doctors throughout the United States should be alerted to a recently recognized disease, rickettsialpox, according to an article in a recent issue of the *Journal of the American Medical Association.*

Possibility of the spread of the disease from New York to other cities in the United States is highly probable, says Dr. Leslie Paxton Barker of St. Luke's Hospital, New York.

The first cases of rickettsialpox were discovered in the Queens section of New York in 1946, according to Dr. Barker. Since then about 150 cases a year, from Queens and three other boroughs of the city, have been reported to the New York City Department of Health.

No deaths have been reported from the disease. Rickettsialpox is harbored by the common house mouse and is transferred to human beings by the rodent mite which infests the mice.

The bite of the mite produces an initial lesion resembling a pimple or boil. Other symptoms of rickettsialpox are fever, sweating, headache and a rash, Dr. Barker says.

Cause of the infection is a rickettsia, a minute microbe somewhat like bacteria and somewhat like viruses.

Rickettsialpox frequently has been confused with chickenpox, and has even been thought to be smallpox, typhoid and typhus, Dr. Barker points out.

More than 30 cases of rickettsialpox were observed from April to September in 1947 and 1948 at the skin clinic of St. Luke's Hospital, Dr. Barker reports.

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Archives of Dermatology and Syphilology, February, 1949: 243-245

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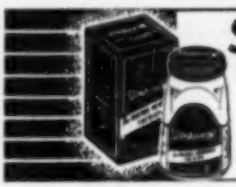
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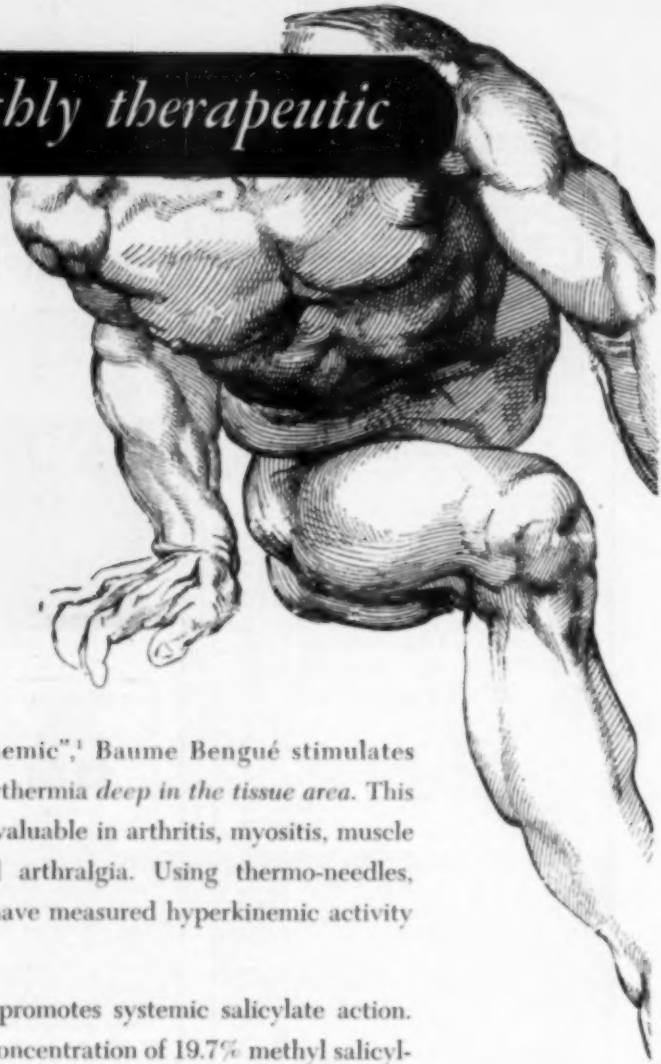
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1. Lange, K., and Weiner, D.: J. Invest. Dermat. 12:263 (May) 1949.

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